

# FIRST PRINCIPLES OF ECONOMICS

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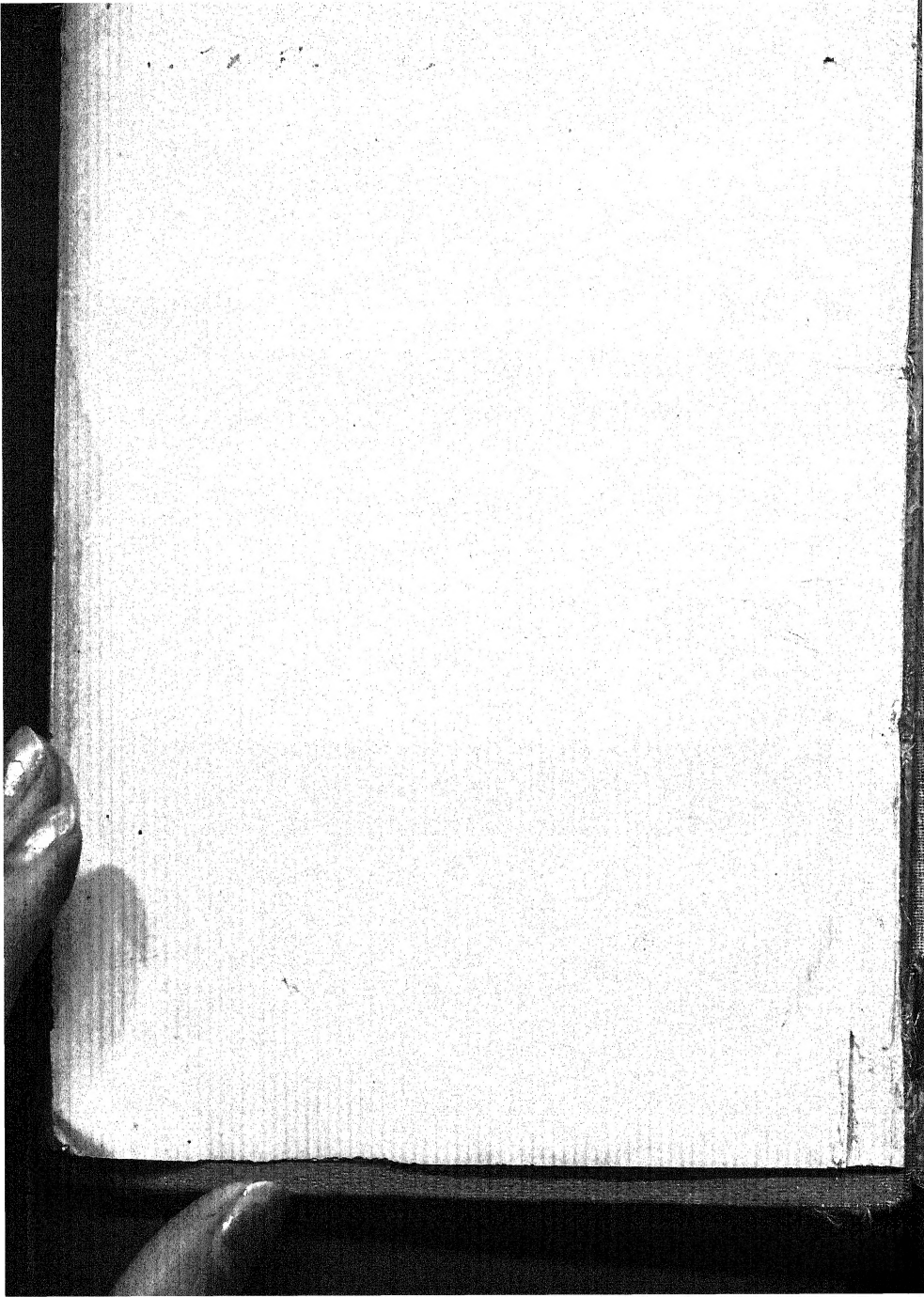
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## P R E F A C E

Intermediate students are attracted in ever increasing number to the interesting study of economics at its first introduction, yet most of them remain painfully ignorant of its true and elementary principles even after two years' contact with it. To them it is a sad confession to make that they are unable to give an economic interpretation of many a problem that they are called upon to solve in every day life. An attempt has been made to help them base their understanding of the subject on reliably firm foundations by presenting this book to them.

No claim is made by the authors to have explored any dark regions of economic theory, nor has any unconventional track been followed by them. The book simply represents the fruit of their hard and thoughtful deliberations on the subject with which they have long been associated as

students and teachers. Guided by the one desire of providing a simple yet accurate representation of the first principles, they have followed in the layout of the book the gradual development of thought rather than any prescribed course of study. The book possesses an additional merit of containing numerous illustrations familiar to students who will find the treatment of the subject steadily progressing and pleasantly stimulating. Primarily serving as a text book for Intermediate students, it will amply repay its perusal by the general reader.

The authors are deeply indebted to Professor C. D. Thompson of Allahabad University, who by his example inspired them as his students and also kindly introduced this little book to readers of economics.

S. L. AGRAWAL  
R. N. GUPTA

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# INTRODUCTORY

## Chapter I

### THE MEANING AND SUBJECT-MATTER OF ECONOMICS

Before the study of a new subject is taken up, the beginner is naturally anxious to know what its name means and what it is about. For this reason, this opening chapter of the book is devoted to the meaning of the term 'economics' and to the discussion of its subject-matter.

**What 'is Economics?** The term 'economics'<sup>1</sup> is formed from the noun 'economy'<sup>2</sup> which is derived from the Greek language. Literally it

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<sup>1</sup> Economics was first called 'Political Economy'. The Greeks used the word 'polis' to mean the city-state, and a city of ancient Greece was an independent state, managing its own affairs. Hence 'politics' came to mean the management of the affairs of the city. Originally, therefore, the name 'Political Economy' was intended to convey the idea of applying the principles of household management to that of the city or state. Just as a house-wife would conserve and make full use of the household income, so was the statesman expected to do with the aid of 'Political Economy' which was supposed to set out rules for his guidance in the matter

meant 'management of the household'. The difference between good and bad management made a great difference in the well-being of a Greek household. The work of management consisted in getting the requirements of the household with as little effort and sacrifice as possible, and in using them with the greatest wisdom and judgment. To-day when the use of money is universal, house-keeping means only the management of household expenditure. Hence in modern times the business of economics is to study how a man gets his income which is mostly in terms of money, and how he uses it.

One important fact about life is that no human being can get on without food, clothing and shelter. Everyone of us must have not only air

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of improving the welfare of mankind. 'Political Economy' is really equivalent to 'National Economy', but during recent years the older name 'Political Economy' has fallen into disuse, because the word 'political' has lost its original significance. 'Political' now stands for Governmental action and regulation, and in this connection we speak of political science or politics. To avoid confusion of idea arising out of the term 'political', 'Political Economy' has been given up for 'Economics' which is in vogue now.

<sup>2</sup> Economy comes from two Greek words, 'Oikos'=a house, and 'Nomos'=a law.

to breathe and water to drink, but also food to eat, clothes to wear, a roof to shelter and many other things besides. Whatever our caste or creed, age or occupation, wants we all have, no matter whether they are more or less, simple or varied. 'How these wants arise and how they are satisfied' is one of the main problems, a systematic inquiry into which is what economics seeks to carry out. Since human motives can conveniently be measured through money, economics considers those and only those wants of man which can be brought directly or indirectly into relation with the measuring rod of money.

These wants form the very foundations of the so-called economic activities which man is prompted to undertake with a view to satisfy them. Men and women, boys and girls, all are striving hard to earn what we call 'a living'. Most of the waking hours of their brief life-time are spent in trying to deal with the problem of bread and butter. To students who have their bread and butter supplied to them by their parents or guardians, this problem may not appeal to be as important and urgent as to those who have to earn their bread and butter. They understand its importance not in their student life but at a time when they go

to settle in life after finishing their studies in schools or colleges. Only then they realise how hard they have to struggle to make both ends meet. Not to speak of students, every human being in this world is concerned with such problems as how to get food to eat, house-room to live in and clothes to keep him warm or at least cover his nakedness.

Each individual, in the course of a single day, finds himself in various capacities. He is an earner of his living, and at the same time a member of his family, a member of a state and also a member of the big human society. Consequently he is engaged in all sorts of activities, economic, patriotic, social, and in addition to these, religious, philanthropic, artistic and others. But of all these activities, those concerned with the earning of a living have by far the most urgent call on him, because they help him in keeping his body and soul together without which none of his activities can possibly come into being. It should not, however, be supposed that if he is engaged in earning his bread and butter, he ceases, for the time being, to be a brother, or a son, or a teacher, or a student, or a subject of the state. Life of a man is supported by several motives all acting together, as if it were a hall upheld in a position by several springs all

working simultaneously. Hence it would be wrong to assume that he is actuated by the one motive of money-making and by no other in his activities at one time or at all times. Other motives may also predominate at a particular time; for instance, while attending to the needs of the members of his family, a person may have only one motive of love and affection which is more prominent than all others, and the same person on the play-ground may have no other outstanding motive than that of recreation. Beginners, however, would do well, for the facility of a clear grasp of the subject, to leave out all other motives except the economic motive at the time of considering human behaviour, although in the interest of strict accuracy all the motives must be taken into account.

The chief motive of man being the preservation of his life, the problem of bread and butter engrosses his greatest attention and therefore economics may be regarded as essentially the science of bread and butter. When the world was young, its people were grouped into many small communities living in villages. Each village was self-sufficient more or less, for its people grew their food, raised their cotton or wool and made their



cloth, or went without things if they could not secure them. They were not interdependent like us for their requirements. To them the problem of bread and butter was easily solved. At least it was not so complicated as we find it today. The simple mode of living has now given way to the complex one, so that food and clothes come from long distances. The village no longer produces all that it needs but gets most of its requirements from others. The cultivator grows food not so much for himself and his family as for others. He makes no cloth, for he knows that cloth and many other things today can be made better and cheaper by others and that he can get them all by exchange. The *dhobi* which he puts on has probably been bought from his village-vendor who himself must have purchased it from some big cloth-merchant of the city, and the city merchant also must have got it from some factory either in Bombay or in some foreign country 5000 miles away in the east or in the west. Cotton must have been grown in the country-side and sold to a cotton-dealer, from whom it must have gone first into a spinning factory and then into the weaving factory which has turned it into a *dhobi*. Thus the whole long line of producers was at work in the making of so

simple a thing as *dhoti*. The cultivator might not at all be conscious of the fact that so many individuals were toiling in the distant corners of the earth in order that he might be provided with a *dhoti*; but in the world as it is constituted today, people are so interdependent that everyone of them is engaged in doing something for others and expects others also to do something for him. This has made the problem of bread and butter so complicated that one cannot easily understand how it is solved without much difficulty for some people and not so easily for others, whether individuals or nations. A study into such problems as these forms the subject-matter of economics which inquires into the causes that provide some individuals with the niceties of life and deprive others not only of these but also of the necessities of life sometimes. Its object is also to find out what makes one nation richer than another.

### Is Economics the Science of Wealth?

Before an answer to the question may be returned it is necessary to know what *Wealth* is.

'Wealth' is derived from the old English word 'weal' meaning welfare. The suffix 'th' indicates a state or condition, so that 'wealth' signifies the state of well-being. When it is said that 'health

is wealth', it simply means that health contributes to the well-being of a man and in that sense it is wealth. In the economic sense of the term, however, health is not wealth.

'Illth', in a similar manner, is the state of being not prosperous, which, in modern English, is indicated by the word 'poverty'. According to this definition, a poor man is one who has 'illth' or no wealth. In economics, however, the difference between a rich man and a poor man is only of degree. Both of them possess wealth; a rich man has comparatively more wealth than a poor man. Even a beggar has wealth in his humble belongings of rags and earthen pots.

In ordinary conversation, the term 'wealth' leads us to think of money which brings thoughts about gold, silver and government currency notes, of riches such as ornaments, pearls, precious stones, elephants, horses and cattle, and of property which people have in land, houses, and furniture. All these things constitute what may rightly be called material wealth. But the economic meaning of the term 'wealth' is wider. Great care is necessary in examining the meaning of the terms used in economics because their economic meanings do not necessarily coincide with their popular or ordi-

nary meanings. When a word borrowed from everyday speech is used in any science as a scientific term, a definite meaning is given to it; but unfortunately all writers in economics have not yet agreed to any particular meaning of every term; and therefore readers are advised to understand thoroughly the meaning which the writer attaches to the words used before they go through his book, for otherwise they are likely to be misled.

Now, anything which contributes to the well-being of people is good. Hence the word 'goods' is synonymous with 'wealth' which, in a broad sense, includes everything that leads to prosperity or to the satisfaction of human wants whether directly or indirectly. To be wealthy then is to possess not a large stock of money but a large stock of goods that have the capacity of fulfilling a want. A man may have countless glittering coins and fresh currency notes and even then may possess no wealth, for if he is thirsty and happens to be in the sandy desert of Rajputana where not a drop of water can be got, all his coins and notes cannot come to his rescue in quenching his thirst and thereby saving his life. His want for water, in spite of his treasure of money, remains unsatisfied. Coins and notes are, in fact, only symbols

of wealth, not wealth itself. No doubt they are money, but money is wanted not for its own sake but for the sake of those things which it will buy. If money were sought for itself, the Government could become immensely wealthy by printing unlimited quantities of paper money. Gold and silver are desired for decorative purposes or for artistic satisfaction on account of their intrinsic beauty; to that extent, of course, they must be regarded as wealth. But they possess no intrinsic power to satisfy our hunger or keep us warm or to gratify any other such needs and desires. For, had it been so, king Midas would have been the happiest man in the world. The value of gold and silver used as money lies not in the intrinsic worth of the metals but in the value of the things which can be bought with them. Money, whether it is made of gold or silver, or nickel or copper, or paper acts only as a means—a medium of exchange; it is merely an instrument of calculation. On this basis we can compare the wealth of two persons. For instance, if one has a house and four chairs and two tables, and the other has a pair of bullocks, one plough and ten maunds of rice, we can not say which is better off on the basis of the belongings of each, because evidently they consist

of quantities which cannot be directly compared. Their values, however, expressed in terms of any one quantity or in money can be compared. Hence money is only that particular kind of wealth, in terms of which the value of all other kinds of wealth is measured.

'Wealth' is synonymous with 'goods' only under the broadest meaning of the term. In the restricted sense in which the term is generally used, 'wealth' does not include a certain class of goods.

There are two great classes of goods 'free' and 'economic'. 'Free goods' are those which *from their nature* cannot be owned by man but can be had in any quantity merely for the exertion of taking them. Air, sunshine and water are some examples of such goods. All of these occur in such abundance that they do not command any exchange value, and surely why should one give anything for what can be had for nothing. It is this class of goods which is considered as not coming within the category of wealth.

'Economic goods' are those which are man's products and therefore can be owned by individuals. They are scarce, or in other words, they cannot be had as abundantly as people would like to have them; hence they command an ex-



change value. Bread, butter, buildings, books and furniture are some of the commonest examples. All of these are exchangeable, because they can be bought and sold. When no payment is made but change of ownership alone is implied as in the case of presents or inheritances, the object in question is said to be transferred. 'Transferability' should not be confused with 'transportability' which means change of place only. A building is not transportable, but it is transferable. The economist usually regards 'economic goods' as wealth.

Some of the so-called free goods become economic goods, whenever or wherever they are appropriated by man and thus command an exchange value. To a diver, for example, air is an economic good. In arid places or in times of drought, water may be bought or sold and become an economic good there and then. In crowded cities water is scarce and therefore conveyed in pipes from a reservoir for the use of dwellers who have to pay a small rate for such water. There also water is an economic good.

The word 'goods' includes not only material things such as food, cloth, buildings and machinery, but also personal services such as those of a cook, a mother, a wife and of many others.

Within the category of economic goods come, in addition to all exchangeable material things, those services only which persons perform for one another for a remuneration. For example, the services of a cook or a wet nurse which cannot be had free, are economic goods; but the same performed by our ladies do not fall within the purview of economic goods, because they are not paid for. Similarly, the services of domestic servants, actors, singers, musicians, soldiers, policemen, teachers and multitudes of others which command an exchange value are economic goods.

When slavery was in vogue, human beings were bought and sold; they were no better than exchangeable material objects. It was no mistake, therefore, to include those slaves in the term 'wealth'. But now when slavery has practically disappeared from the surface of the earth it would be simply ridiculous to include man, the producer of wealth himself in the term 'wealth'. For, wealth is only a means to an end and not an end in itself, whereas a man is an end in himself, not only a means.

The qualities of a man such as health, strength, skill and intelligence which lie within him and cannot be detached from him form his *personal*

*wealth.* They are neither transferable nor exchangeable and therefore cannot be regarded as economic goods. That they enable people to earn their living by making them efficient is quite true, but then they are the means of obtaining wealth, not wealth itself. It is one thing to be wealth and another to be the source of wealth. Land, so far as it provides us with space, is wealth, but that put to agricultural purposes is only the source of wealth. Similarly, a mine or a quarry is a source of mineral wealth. The snow on the Himalaya mountains is the source of wealth, the hydro-electric energy.

To sum up the matter in the form of a definition: *Wealth consists of all goods which are external to man and possess exchange-value.* The phrase 'external to man' is used to exclude man and his personal qualities from 'economic goods' or 'wealth' in the narrow and usual sense of the term. According to this definition the 'good will' of a business is a part of wealth, because it is bought and sold and also because it is external to man in the sense that it does not lie within him but arises out of his relations with other members of the community. The Ganges is only a source of wealth; its water is sold for irrigation purposes

and its dry bed is let out on rent for growing vegetables etc. The Himalayas also are a source of wealth; the right to use a portion of them falling within the territory of a ruler is sometimes bought and sold.

### **Consumption and Production Goods.**

Man produces wealth for his own benefit or welfare. From the economist's angle of vision, he is both a producer and a consumer of wealth. Hence wealth is often classified in economics into:

- (1) Consumption or consumers' goods, and
- (2) Production or producers' goods.

Consumption or consumers' goods include all those goods which go directly to satisfy human wants. They may add or at least preserve the energy of man; they may also help in maintaining his social position. For example, food may increase and clothes only preserve his energy; palatial buildings and costly furniture may maintain his reputation in society. All such goods as these, therefore, make up this class of goods.

As distinguished from consumers' goods, production or producers' goods are instruments of production which help to produce more consumers' goods. For example, ploughs, reapers, agricultural lands, machines, engines, railroads and raw

materials are some of those goods which are not wanted for their own sake but for producing agricultural goods or manufactured articles which can satisfy human wants directly; hence they are termed producers' goods.

The distinction between consumers' goods and producers' goods sometimes turns upon the purpose for which goods are required. Thus a building used as a dwelling is a consumer's good but the one used for housing machines or engines is a producer's good; a bullock-cart employed to carry manure to the fields is a producer's good, but the same used by its owner for the purpose of travel is a consumer's good; and similarly rice used for appeasing hunger is a consumer's good, but that used for seed is a producer's good.

From the point of view of ownership, wealth may be classified into:

- (1) Individual wealth, (2) Collective wealth,
- (3) Public wealth and (4) National wealth.

*Individual Wealth.* A person's wealth is generally supposed to consist of two classes of goods. In the first class are included those goods which can be handled and to which he has, by custom or law, private rights of property, e.g., buildings, land and shares in companies. In the

second class are included all goods other than personal wealth which cannot be handled and yet serve *directly* as the means of enabling him to acquire tangible things. Thus this class includes the good-will of a man's business, or the professional connections of a doctor or a lawyer.

*Collective Wealth.* It consists of all tangible goods which are collectively owned by all or individually by none, e.g., state property, or property possessed by associations for charitable, benevolent, educational or religious purposes or property of public libraries.

*Public Wealth.* It consists of property held by governing body, whether central, provincial or local, e.g., roads, canals, railways, harbours, bridges, parks, Government houses and Dak Bungalows.

*National Wealth.* It comprises of public wealth, collective wealth, and private wealth of all individuals who are the members of the nation. It includes economic as well as such free goods as healthy climate, favourable geographical situation etc., which greatly add to the wealth of a nation. In estimating the national wealth of India, the Ganges and the Himalayas, which have immensely contributed to her prosperity, cannot

be ignored. The Himalayas, besides conferring many other benefits upon us have given birth to almost all the important river-systems of Northern India. The Ganges which is one of them has played such an important part in moulding the economic life of the people here as probably no other river of the world has done anywhere else. It is claimed that its water contains certain natural properties which make it superior to all other waters, because, they say, it can be kept over long periods without any danger of getting spoiled and is also highly beneficial for health. For this reason and many others, the Ganges is worshipped even to this day by millions of men in this country. A major portion of Northern India is the "Gift of the Ganges". The river is the cause of its formation. It still renews its soil. It supplies water for irrigating thousands of acres of its land. It supplies power for hundreds of water mills and carries a large portion of the internal trade of India.

In addition to these various kinds of wealth, there are oceans such as the Indian or the Atlantic which do not belong to any one nation and may, therefore, be said to form *international or cosmopolitan wealth*.

Having thus considered the meaning of the



term 'wealth' we are now in a position to examine whether or not Economics is the science of wealth.

Economics<sup>3</sup> has been called the science of wealth by earlier writers. Carlyle and Ruskin designated it as the Gospel of Mammon. It might be defined as the science of wealth, if wealth alone were the subject of its study. But that is not so. It studies wealth and also man. Man, as a matter of fact, is implied in 'wealth' indirectly for we cannot think of wealth without thinking of man; but as it is kept understood, the definition does not bring out clearly the importance of human element. If, however, economics be defined as the science of wealth in relation to man, it cannot be objected to but for one defect that this gives more prominence to wealth than to man. In fact economics is the science of **man** in relation to wealth.

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<sup>3</sup> In early days, economics was regarded as a dismal science,—a science dealing with the selfish pursuit of wealth by individuals, and economists were looked upon as a selfish lot of people who taught nothing but the gospel of selfishness. This was so, because in those days the only ideal of man was thought to be the worship of the god of wealth and man himself was supposed to be so enamoured of it that he could stoop lowest in order to have his wants satisfied and would not have any scruples whatever in acquiring for himself the riches of his fellow-beings.

Nobody can deny that wealth does play an important part in the study of economics but it must also be admitted that wealth is made for man and not man for wealth, and consequently wealth is not so important as man for he is not only the starting point but also the goal of our science. Thus economics is, 'on one side, a study of wealth, and on the other and more important side, a part of the study of man'. An economist is concerned not so much with the nature and forms of wealth as with the economic activities of man. Hence economic activities, rather than economic goods, form the subject-matter of economics.

**Economics is a Social Science.** What economics really deals with is man as wanting, working, getting and using, and not wealth. But it deals with man not as an isolated individual cut off from society, but as a member of society, as a social being, as an individual living in a community. He may, for instance, be one of a large number of cultivators living in villages, or one of thousands of merchants in a city, or one of hundreds of factory labourers, or one of many vendors in a town market, or one of the teaching staff of an educational institution, or one of the huge student community. In whatever position he may be, he

is necessarily a member of the big human society, in which every individual member works to produce what some one else wants, and obtains in exchange for the product of his labour, the food, the houseroom, the clothing, the recreation and all other things which he wants. Hence the subject-matter of economics is man, his wants and his dealings with other members of the society in order to satisfy his wants.

**Economy, Economic and Economics.** In common parlance, 'economy' means 'covetousness' or 'thriftiness'. A man is said to be economical, when he is miserly in his habit of saving or when he is unusually prudent in his expenditure. In the language of economics, the word 'economy' is used in a different sense. 'To economize', from the economic point of view, is 'to choose'. The necessity of a choice arises from the fact that the resources at the disposal of a man are limited whereas his ends are unlimited. His wants are too many for his time, money and energy. He has, for example, only twenty-four hours to spare each day, and therefore he has to choose between the different uses to which these hours may be put. If it is a choice between work and play, human nature as it is, he contrives to divide these hours in

such a way as to make the balance of advantage swing in his favour. The span of a man's life is so short that he cannot acquire all knowledge in his brief life-time; consequently he has to economize. If you would wish to be both an economist and a politician, you cannot do both completely in your limited life-time even if the pace of acquisition of knowledge were made much greater. All that you can do under the circumstances is to gain as much knowledge of each of the two subjects as it would be possible at the most by distributing your time prudently between study and leisure. Similarly you cannot expect a man to be at work the whole day. He must be given rest. If left to himself he would surely like to distribute his energy between activity and repose to the best of his advantage; in other words, he would like to economize or choose the proper proportion in which to divide his energy with a view to reap the greatest benefit. In a like manner all individuals have to behave with regard to their expenditure on various articles, because their incomes are after all limited and their wants unlimited. They have to economize, because they have not money enough to buy everything and any quantity of it. From among several different things which his

money can buy for him, each individual tries to choose with wisdom and judgment those few things and also those quantities of them which will be worth most to him in the long run. People are not always the best judge of their actions, for they cannot see far into the future; hence they make mistakes and gather experience to guide them in the future.

Thus economy is an art and it is not given to everybody to economize successfully. An economist is supposed to be well-versed in the science of economics which is concerned with that aspect of human behaviour which arises from the scarcity of means to achieve given ends. He is expected to understand very well how to distribute, in the best possible manner, the scarce means of time, money, and energy between the alternative uses to which they can be put. He is indeed the man who can better know the 'science of scarcity' than anybody else.

If every member of a nation were to become an economist, poverty must disappear and prosperity reign in that country. A country cannot but be prosperous and happy, if all its people understand and act up to the principles of economics.

Sometimes the word 'economics' is confused

with the word 'economic'. This should not seem strange, as both of them are derived from the same word 'economy', no matter if their uses have given them meanings which are widely different. Economics is the name of our science which is too well-known to the reader by now. The word 'economic' has adopted so many meanings that its use would better be avoided as far as practicable. In a few places where it is already too late to make any change, it may be retained but its meaning there must be understood quite clearly. For instance, in the phrases 'from the economic point of view', 'economic goods' and 'economic man' the word 'economic' occurs and is freely and frequently used, but in each of the three phrases, the meaning of the word 'economic' is different. In ordinary language, the word 'economic' is used as equivalent to 'material'. But it is evidently not used in this sense in the phrase 'from the economic point of view'. This phrase is really equivalent to 'from the point of view of economics'. In the phrase 'economic goods' it would be a contradiction in terms if 'economic' were taken to mean 'material' or 'tangible', because 'economic goods' include certain personal services also which are non-material. The word 'economic' in this phrase

stands to distinguish this class of goods from the other class which consists of 'free goods'; and since free goods are not exchangeable, the word 'economic' has come to mean 'exchangeable'.

The third phrase 'economic man' was used by the classical economists to mean that man with which the economists were supposed to deal. He was not a material man of flesh and blood but a fictitious man—an abstract who was considered to be wise enough to understand his self-interest well. Today economics is concerned with such man as is actually met with.

A man with the knowledge of economics may be called 'economics man'. 'Economics' is often called by the name of 'economic science'. It would better be called 'science of economics'.

The problem of economy is fundamentally different from the problem of technique. Suppose, for example, you have a certain quantity of wood which is not enough for all uses to which you can put it. If you want all this wood to make a fire at one time, your activity essentially depends upon your knowledge of the technique of fire-making. In this respect your activity is purely technical. If you want all that wood for a fire and also for some other purpose, say, for making a door, then



the problem before you is how much wood to use for fire and how much for door. The techniques of fire-making and door-making are still important; but the first problem before you is not one of techniques but that of dividing the available quantity of wood between the two purposes to which you want to put it. In these circumstances, the problem is one of economy. Similarly, if a man is considering the building of a house, the question whether the roof should be made of paper or of some other material is a question not of economics but of the technique of house-building. But the question whether the roof shall be of slate or tiles may well depend on the relative prices of these materials and therefore have an economic aspect. To put the difference briefly, when the means and the purposes both are many, the problem that emerges is that of economy, but when the means are many and the purpose only one, the problem that arises is one of technique. Evidently thus, economics is concerned only with what happens when things are scarce, that is, with the problems of demand and supply upon which depends the valuation of goods, and not with the technique of manufacture of production, even though the latter is very important.

**Importance of the study of economics.**

Like all other sciences, economics serves as a useful instrument for sharpening our intellect and cultivating our habit for careful observation, patient analysis and accurate reasoning. Since it deals with man whose social life and motives are complex and difficult to understand, and attempts to establish a uniformity among them, it provides a good exercising ground for training our mind and developing our mental faculties for a scientific study of social problems.

In considering the problem of poverty and several others of a similar character and practical importance, economics is of signal service. For example, in order to understand how it is that we find a poor people in a rich country like India and how the destruction of the poor is their poverty, we have to look into these problems through the eyes of an economist. For the remedy to be effective, the cause has first to be ascertained and the treatment to be started accordingly. The growing problem of unemployment among the educated classes and the crushing poverty of the masses today in this country are some of the serious problems which are confronting us all and an immediate solution of which is what is most urgently needed.

The only cause for a people to be poor in a rich country, from the point of view of an economist, may be that they are not acting up to the principle of economy; that they are not using their time and energy to the best of their advantage; that their poverty is a penalty for their laziness, vice and stupidity. Since Nature is niggardly and the means of time and energy at the disposal of Man are scarce, he must economize before he can be prosperous. People have to be honest, intelligent, thrifty and industrious, before they can be happy and before they can leave a prosperous country behind them for their children and grandchildren so that they may not be compelled to stay in that wretched condition into which they themselves are born, but may get a fair chance in life. Prosperity means that all people whether cultivators, workers, traders, teachers, bankers or capitalists enjoy good incomes and use them intelligently to derive the greatest benefit out of them. But good incomes can be enjoyed only when every individual of a country is encouraged to economize his time and energy and when the joint product of efforts thus made is fairly distributed to ensure each worker his due share of it.

Again, individuals and societies may in their

own interests turn to account their study of economics. The monopolist, for example, may put to practical use the knowledge which he has gained from the study of the science about the fixing of the monopoly-price; the producer who has acquainted himself with the evil results which are likely to follow from over-production and trade depression may well be on his guard against such mistakes; the banker may derive practical guidance from his knowledge of the conditions of periodical crises; and similarly the trade-unions may be able to decide, on the basis of theoretical knowledge, which conditions will be most suited for a successful strike.

Lastly the science of economics may be of great practical use to the state in shaping their policies with regard to taxes, bounties, free trade or protection for in such cases political considerations alone are not all in all.

### EXERCISES

1. What idea of economics will you give to a student who has passed his High School Examination and now desires to take it up as one of his subjects for his Intermediate Examination?

2. Without omitting any important point, frame a definition of your own for economics in as few words as you possibly can, and then justify it.

3. Do you agree with the following definitions of economics? Give reasons for your answer.

(a) Economics is the science of bread and butter.

(b) Economics is the science of scarcity.

4. Explain the following so as to bring out clearly the meanings of the italicized portions.

(a) Man is the *beginning* and *end* of all economic activities.

(b) 'Economics is a study of man's actions in the *ordinary business of life*'.

(c) Economics is essentially a *social* science.

5. Define economics. Is it the science of wealth? Is it of any help in practical life?

6. What is wealth? Is money wealth?

A cultivator does not usually pay for the corn or the cow-dung-cakes which he uses. Do you regard them as economic goods?

7. 'The destruction of the poor is their poverty'. Who is poor? Is a poor man not wealthy from the economic point of view? How do you define wealth? Of the things around you in the room, mention three that are wealth and three others that are not wealth.

8. Consider whether the following are wealth, and classify them according to ownership.

A rupee, gold in a coin, gold in the mine, a broken umbrella, barren land, disabled cattle, love, friendship, honesty, services of doctors, lawyers and social reformers, climate, oceanic scenery, Mussoorie hills, coast-line of India.

9. Is there any difference between 'wealth' and 'sources of wealth'? Are the Deccan plateau, the Sambhar lake, the sadhus and fakirs, the unworked mineral resources and the harbours of a country different forms of wealth?

10. Distinguish between the following and give illustrations to make your meaning clear.

(a) 'Free goods' and 'collective goods'.

(b) 'Personal wealth' and 'person's wealth'.

11. How do production goods differ from consumption goods? Classify the following into production and consumption goods and state your reasons for that sort of classification.

Pearls and diamonds, gold and silver, live-stock of a farmer, a horse, a book.

12. Distinguish between economics and economy. Is 'economic wealth' the same thing as 'material wealth'? If the word 'goods' is synonymous with 'wealth' what

difference would it make if in the phrase 'economic goods' the word 'goods' were replaced by 'wealth'?

13. What is the subject-matter of economics? Can economics study the activities of hermits, thieves and robbers, misers, and students who earn nothing for their livelihood?

14. Estimate the importance of the study of economics. What practical use are you going to make of your knowledge of this subject?

15. Who have to economize, the rich or the poor, and why? Don't you economize? Why does the necessity at all arise? What is it which you economize?

16. The word *economic* may make one man 'think of coins, another of figures in bank-books, another of crops growing in the fields and cattle browsing in the meadow, and another of the morning crowd going to its work in some crowded city'. Is this use of the word 'economic' in conformity with that of 'economics'?

17. 'We are not limiting our attention to people of any particular race; we recognise that one race differs in many respects from another, but we confine our attention mainly to the points in which they do not differ'. What bearing has this statement on the subject-matter of economics? Explain.



# INTRODUCTORY

## Chapter II\*

### RELATION OF ECONOMICS TO OTHER SCIENCES

Practical economic problems are seldom restricted to economics proper. In considering railway rates, for example, the decision does not rest entirely upon economic grounds but upon such considerations also as what rates are fair and reasonable. In shaping commercial policies and restricted regulations, both economic as well as political considerations have to be taken into account. In fact, to understand every problem of this nature completely, we are required to study other sciences in addition to economics. Problems of property, inheritance and labour legislation need on our part a knowledge of law in addition to that of economics. Problems of currency and trade cycles require a historical background for a clear grasp and a practical application of them. Problems of insurance of all kinds urge for a knowledge

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\*Students are advised to read this chapter after they have gone through the book.

from ethics, because both study man, the one in relation to wealth and the other in relation to morals. From the purely scientific stand-point, the function of economics is not to pass ethical judgments; it has nothing to do with the questions, whether the consumption of liquors is morally justified or not, or whether the tools of the house-breaker are morally allowable or not. His only business is to see whether such articles are or can be the subject of exchange. From the practical stand-point, no solution of a problem relating to human conduct can be regarded as complete until its ethical aspects have been considered. To meet the demands of justice and morality, it is necessary to consider a practical economic problem from the ethical point of view also. For instance, it is essential to ask questions such as these: Is it right to charge for a thing a price which is above its cost price? Is it wrong if the seller conceals from the buyer any defect in his articles? Is it right to tax the people so highly as that? Is it wrong to impose high import duties on Japanese goods? The economist is not necessarily a moralist, but there is the inner voice in every man, the voice of his conscience which urges him all the time to do what is right and to give up what is wrong. It is true

that he is concerned with the actual facts of life and not with the ideal, but that does not mean that he should not consider the ideal in examining the real. On the basis of his investigations he can surely build rules that may take man nearer to the ideal.

It is often remarked that economics lays too much emphasis on the wealth-getting and wealth-using activities of man, that is, on the materialistic side of human life, and practically ignores the ethical side of it—the human character. Nobody can deny that the morals of the people have much to do with making a nation wealthy and prosperous, but it is also true that the character of a man is largely influenced by (1) the amount of his income, (2) by the nature of his occupation and (3) by the mode of his spending that income.

If a man's income is large, he is free at least from the anxiety of earning a livelihood for himself and his family. If it is large enough to relieve him of the worries for his household expenditure, he can find time for higher and nobler aspects of life. He can give attention to physical, mental and moral developments. A man with a large income is generally frank, honourable, generous and arrogant.

The means which a man adopts to earn his livelihood are always much concerned in building his character. Is not the character of a cultivator different from that of a clerk or a doctor? A cultivator is usually not as intelligent as a clerk but more hardy and painstaking than the latter. The difference is due to the difference in the nature of the occupations of the two. A peasant has to devote nearly the whole day to physical labour, while a clerk to mental effort. A clerk is busy all the year round. His habits, therefore, are more or less regular. A cultivator has enforced idleness during certain periods of the year and hence his habits are not so regular. A surgeon has to handle delicate instruments; naturally he is very careful and precise. A cultivator has to deal with rough tools; as a result of his association with them his habits are clumsy and coarse. The profession of a doctor demands punctuality and regard for the convenience of others. The profession of a clerk requires co-operation and discipline. Thus the formation of a man's character largely depends upon the nature of his occupation.

The influence on character of how a man spends his income practically needs no explanation. For if a man spends his income lavishly without

any thought for the morrow, he evidently lacks foresight and can hardly be called wise. He is, on the other hand, self-indulgent and reckless. He sacrifices larger needs of the future for the immediate pleasures of the moment. If income is laid out with an eye to the future, he cannot but be praised for his forethought and self-mastery. If income is spent with due regard to the needs of dependents he deserves all credit for his unselfishness and generosity.

**Economics and Politics.** Politics is the science of governmental functions, methods and organisation. It deals with man in relation to the state, whereas economics deals with man in relation to wealth. The two sciences are related to each other because some human actions are concerned at the same time both with wealth as well as with government. Economics and politics overlap, for example, in matters of customs, taxes, and factory legislation. The business of the economist is to examine how government activity effects wealth, and the interest of the politician lies in knowing what economic result is likely to follow from this or that course of governmental action. One of the functions of politics is to devise means by which to raise funds for the governmental activities which

have become manifold now. If a tax is to be imposed for this purpose, the politician has to discuss and analyse what kind of tax it should be, how it would affect industry and commerce, and how much revenue the state can expect from it. The increase in postal rates or in duty on salt are some of the problems of this nature. They fall within the jurisdictions of both economics and politics. Regulative departments also such as those which manage and supervise means of communication and transport are on the border-land of both the sciences. Thus economics occupies joint territory at places with politics.

### **Economics and Law (Jurisprudence).**

Economics is the science of the material side of human welfare. But material welfare is impossible without law and order. To promote economic prosperity of the people, the first and most obvious thing which the government must do is to make and enforce law with a view to create a state of peace and confidence. Nothing else so discourages industry and enterprise as uncertainty and insecurity of person and property. A country can never have prosperity, if its people are robbed of the reward for their labour and are, through discouragement, hampered in further production. When a

man does not feel sure of enjoying the full advantage of his own industry, enterprise and foresight, he has no incentive for exercising these virtues to the full. There can be no form of waste worse than that which results in the loss of the productive energy of the people. Hence the specific aim should be to establish and promote all the conditions that contribute to the highest economy. If there are persons who have no moral or legal restraints, who kill, maim, injure, rob or deceive, they must be held in check and punished in order to make them respect law and justice. Industrial freedom should not be allowed to go too far; competition can have its own way only so long as the strong do not prey upon the weak and the ferocious upon the gentle to defeat the object of production by unproductive methods. In fact, competition ought to be an instrument for making industrial success depend upon production. Furthermore, to infuse confidence in the people to economize time and energy, the government ought to standardise coins, weights and measures, and frame suitable laws to punish the counterfeiters. That is at least what the organised government or society is expected to do for the economic welfare of the people.

All this leaves little doubt for the reader to



admit that law is essential on economic grounds. It, in fact, lays the frame-work for the prosperity of masses, and the prosperity of masses is what the science of economics deals with. Hence economics and law are dependent upon and inter-related to each other. Law is as much necessary for economic well-being as economic well-being for the enforcement of law and establishment of order.

**Economics and Physical Sciences.** It may be observed at this stage that in economics social as well as physical conditions have to be taken into account. For instance, if the wages of a carpenter are increased, they can be maintained at that high level only when he increases his efficiency accordingly by better living. Similarly, to investigate the effects of free trade, it is indispensable to ascertain what physical differences exist between different countries. The famous law of diminishing returns has a direct physical basis and can hardly be regarded as a true economic law. From the economist's point of view, its importance consists in its relation to man's productive power as applied to land.

The study of physical conditions form the subject-matter of what we call the physical sciences, as contrasted to social sciences. Among them are

physics, chemistry, mathematics, geology, engineering and several others. Biology (Botany and Zoology) which is the science of life (of men, animals, and plants) is also included in them. Economics is only indirectly related to physical sciences. It simply presupposes laws established by those sciences, and on the basis of them proceeds to find out how far they influence the economic activities of man. Since the physical conditions affect man's economic efficiency, the production of material wealth is dependent largely upon physical condition; but physical laws do not constitute the subject-matter of economics. The relation between economics and mathematics is set out in a separate chapter on 'visual aids'. Laws such as those of variation and adaptability which have been taken directly from biology have furnished basis to the economist to build his own laws upon.

**Economics and Psychology.** The economist in his more abstract enquiries is greatly concerned with the motives by which an individual is usually influenced in his economic activities, and there are laws such as the law of diminishing utility which must be studied in relation to an isolated individual. Hence economics is related to psychology which deals with man in his purely individual

capacity. But it merely accepts psychological facts just as it does physical laws, and does not attempt to explain or analyse those facts. They form the basis of reasonings and not the subject-matter of economics.

Psychology is the science which deals with the working of the mind, with motives, with will power, with concentration, with behaviour, all of which are of great importance in the study of economics. Men in general avoid pain, and seek pleasure. They, all other things remaining equal, prefer a greater to a smaller gain. They want the maximum of pleasure with the minimum of pain. They tend to act according to the well-known 'hedonic principle' (maximise pleasure or gain, minimise pain or effort). Under certain conditions they forego their present in preference to future gratifications. All such bare facts of psychology are of great assistance to the economist in his analysis of the pain and pleasure economy upon the wants of an individual. The important law of diminishing utility which holds the field in the department of consumption is based upon the psychological fact that a man is incapable of deriving an equal amount of pleasure from each successive unit of a commodity, if its consumption is continued. From

this law has been derived the law of demand which occupies a prominent position in the department of Exchange. Though the relations of all important sciences to economics have been traced, we are still left with two—history and geography which are greatly useful to the economist. A consideration of these relations to our science will now follow.

**Economics and History.** There are two kinds of histories: (1) History of economic facts, usually known as economic history, and (2) History of economic ideas, which may be called history of economics.

Economic history is a record of past economic facts. It helps the economist to interpret the present with a knowledge of the past. For example, in working out the general theory of modern banking, it is helpful to look to the past history of banking—the original object of banks, their functions and modifications introduced in them from time to time with reasons therefor and consequences thereof, etc., etc. The history of famines in India or any other country may help a good deal in establishing causal relations between price, supply and demand of grain. The influence of law and custom on price, wage, and rent may likewise be traced. The effect on wages of an epidemic of a virulent

type such as the influenza of 1918 may well be ascribed to the sudden diminution in the supply of labour. But this is not the only function of economic history. Far more important than this is its function of criticism, of bringing mistakes to light. It was believed, for example, that the wages of labourers were determined entirely by the standard of living which did not affect them. As a matter of fact this was later found to be incorrect on the basis of historical evidence. Similarly, the Malthusian theory of population has been attacked for want of historical support in respect of many points stated in it. There are certain phenomena, however, whose validity cannot be established without reference to the past. The occurrence of credit cycles, the effects on trade and industry of the discovery of gold mines or of the scarcity of gold, the working of a system of progressive taxation, the effects of machinery on wages, and many other problems of a similar character need historical material for their analysis and confirmation.

History of economic ideas is a record of the historical succession of economic theories. Many modern theories in economics have their roots in the past. The history of their origin and development greatly assists the economist to analyse and under-

stand them. In all departments of human action, facts and ideas act and react upon one another. Hence economic theories must be studied in relation to the economic facts that helped to produce them, and also in relation to those economic facts which the theories themselves helped to produce. Social institutions and the force of public opinion about them are powerful factors that sometimes determine the course of economic development. If it were considered, for example, that the taking of interest from the cultivators was immoral because they approached the money lenders only in circumstances of misfortune, the economic development would proceed on altogether different lines. It can not also be denied, however, that many social and economic institutions of today are the direct outcome of the progress of our thought regarding the phenomenon of wealth. For example, some are of opinion that the caste-system among the Hindus was originally due to the fact that this sort of division of labour was indispensable for the prosperity of the masses in those days of struggle and disorder. The present banking institutions stand for the purpose of promoting the production of wealth and with it the prosperity of the people.

Thus we see that economics and history assist

and control one another in various ways. A knowledge of economic theory serves the historian to understand what kind of historical data is likely to have an important economic bearing. To the economist it is necessary that he should have a clear grasp of the main facts of economic history, if he wants to understand economic theories properly.

**Economics and Geography.** Man cannot be scientifically studied apart from the ground which he tills, or the lands over which he travels, or the seas over which he trades. It would be impossible to conceive of any of his activities apart from the distribution of the great features of the globe, the inevitable theatre of progressive human activity. The surface of the earth with its manifold features of mountain and tableland, plain and desert, ocean and lake and river, forest and prairies, continents and islands, air and rain and sunshine in all their complicated combinations constitute his immediate environment which influences his activities in all directions. It not only decides his actions and movements but also determines the course of the growth of industry and the development of commerce. The differences in appearance, dress, habits, manners, modes of living, physique, ideas, occupation and culture are largely the outcome of the influence of

geographical conditions on man, and of man's action in modifying them.

There is thus an intimate relation between man and his geographical surroundings. A study of this relation forms the subject-matter of modern geography whose business is to explain how position, relief, climate, soils and vegetation cause differences between different regions, and how these differences give rise to differences of products, of opportunities, of types of man, and of distribution of man. Man is the central theme of modern geography. He is the converging point of the science of economics also. Hence the close relationship between geography and economics. One studies the activities of man in relation to his natural environment; the other studies the activities of man in relation to wealth.

#### DEPARTMENTS OF ECONOMICS

For the convenience of scientific analysis and study economic activities which form the subject-matter of our science are usually classified into four departments—Consumption, Production, Exchange and Distribution. Since it is easier to concentrate the attention upon a part of the subject than upon the whole, the subdivision is carried out in a way that sets off some particular class of activities which



are sufficiently distinct from others for special study. The scope of each department runs thus:

**Consumption.** Under this head we include the consideration of

1. the meaning of consumption in economics;
2. the remarkable variety and degree of man's wants, their action and reaction upon one another, and their relation to wealth; and
3. the distribution of income.

In short, this department deals with all those activities of man which are concerned with the utilization of wealth.

**Production.** This department is devoted to the consideration of man's efforts to satisfy his wants and those of his fellows

1. by rendering direct personal services such as those furnished by domestic servants; or
2. by plucking fruits, catching fishes, or similarly obtaining other objects, and then putting them into the hands of the consumer; or
3. by rearing sheep and cattle and growing agricultural products, and carry-

ing them to those who want them;  
or

4. by harnessing the forces of nature with the object of turning them to account, such as wind power to turn his mills; or
5. by manufacturing goods and transporting them to those places where they are needed; or
6. by providing facilities for trade, commerce, credit and means of transportation and communication.

In short, it covers all those activities of man, which are undertaken by him with the sole purpose of making the natural products and resources fit for human use and of carrying them to those who need them.

**Exchange.** Under this head we are concerned with

1. the reasons for which goods change hands,
2. the rates at which they are bartered or bought and sold,
3. the methods by which they reach the ultimate consumer, and
4. the machanisms and institutions which

facilitate transactions both at home and in foreign trade, such as money and banking organisations.

In short, this department considers those human activities which are responsible for giving an individual or a community what he or it wants in return for what he or it has produced.

**Distribution.** Under this department we are concerned with

1. the division of the joint product among those agents of production who have helped to produce it, and
2. the relation of these agents' earnings to their efforts or services.

In short, this department concerns with those activities of man which consist in the valuation of his service as an agent of production.

Such division of the subject-matter of our science into the aforesaid departments has led some of the writers to speak of economics as the science which deals with the consumption, production, exchange and distribution of wealth. But this definition suffers from the same defect of not emphasising human element as the definition 'economics is the science of wealth' does.

None of the four departments is independent

of the others, but is so closely and intimately connected with them that it cannot be satisfactorily and completely studied without having regard to each of the other three. A discussion of the inter-relation between them will, therefore, be given now.

#### INTER-RELATION BETWEEN THE DEPARTMENTS

**Consumption and Production.** Every man is a consumer and almost every consumer is a producer. As a producer man spends energy. As a consumer he receives energy. It is obvious that he must take in at least as much energy as he gives out. Hence consumption is necessary for production and production is necessary for consumption. What is true of an individual is also true of the whole society which is made up of individuals. For if there be no consumption, there would be no production of goods, and if there be no production of goods, there could be no consumption. Thus consumption and production are interdependent. Consumption is the basis of all production. The infinite wants of man are the motor force of all economic activity. Annihilate them and the whole human activity will automatically be brought to a dead stop. Production supplies the means by which to satisfy these

wants directly or indirectly. Hence consumption and production work together.

Consumption directs production. It determines what kinds of goods shall be produced, because the goods consumed vary in accordance with men's wants and preferences. Production limits consumption. It unfolds the amount of goods that are available for consumption, the sole purpose and end of all production. If more is to be consumed, more must be produced. It also sets a limit to the quantity of each variety of goods.

Consumption and production thus act and react upon each other.

**Consumption and Exchange.** In the present state of society, satisfaction of our wants, or consumption is impossible to a great extent without having recourse to transfers or exchange. The cultivator, the weaver, the potter, the barber, the shoe-maker—nay, all of us depend upon one another for the mutual fulfilment of our needs. The cultivator wants cloth, shoes, earthen pots and many other things besides food which he grows. Those he obtains only by exchange. The weaver wants food, pots and a good many other articles, for which he has to look to others. Similarly the potter and the shoe-maker have many other requirements be-

sides the commodities they themselves make; they have to get them all from others. Hence we see that exchange is necessary, before a major portion of men's wants can be satisfied. Exchange benefits both the parties, the buyer and the seller. The buyer gets what he wants more urgently in exchange for what he does not need so badly, and the seller parts with what is not so useful to him in return for what will satisfy him more. If it were not so, exchange would not take place. If all gain accrued to one party only, the other would not be willing to give his article in exchange. The relative satisfaction must be obtained by both before they agree to exchange their possessions. In fact it was on this principle of mutual benefit that the system of exchange came into existence and that each individual found it to his advantage to offer to exchange part of his surplus produce for a part of his fellows' produce. And before the system of exchange or barter came into being, they must have discovered that every man was not equally fitted for all kinds of work and that it was, therefore, necessary in the interest of all of them to assign one task to one man and another to another man. In course of time, this separation of tasks was carried out in such minute details that today we

find the machinery of production and exchange greatly complicated and yet wonderfully efficient. For the furtherance of transfers or exchange now we need all sorts of middlemen, wholesalers, retailers, bankers, commission agents and a multitude of others. What do they all stand for but for giving the benefit of modern achievements in production to the consumer? The whole machinery of exchange would go out of gear if the consumer were to obstruct its working. Hence consumption is as necessary for exchange as exchange for consumption. They are dependent upon each other. The intimate connection between them becomes all the more obvious when we consider that the rates of exchange depend chiefly upon the laws of demand, and the laws of demand in their turn depend upon the laws of consumption.

**Consumption and Distribution.** A man's habitual consumption decides how he will apportion (distribute) his income for the satisfaction of his several wants. If he is in the habit of spending more on clothing and less on food, he will lay out a large portion of his income on the purchase of clothes and a smaller portion of it on the purchase of food. If he spends more for food and less for

other things, he will accordingly divide his income. The distribution of income over his various needs depends partly on an individual's tastes and habits and partly on his social position. But how his income will be divided between his several needs cannot be determined, unless and until the consumer knows how great his income is going to be. For, if his income is going to be big he may find it possible to meet all his needs more or less. But if his income is going to be small, he may have to postpone the satisfaction of some of his wants—particularly those which he does not consider to be very urgent. The question how big the income is going to be is decided by distribution which determines how the joint product of society will be shared among the workers and the property owners who have united to create it. Thus it is not only consumption that determines distribution, but the converse of it also is equally true. In fact, the two are mutually dependent.

**Production and Exchange.** The introduction of division of labour among producers and its further sub-division into a boundless range and an indescribable complexity on account of an increased use of machinery has made the present day system of production so bound up together into a



relationship of mutual dependence that exchange has become a necessity of far greater importance today than it used to be. Now before a commodity is got ready for use, it has to pass through innumerable hands in its various incomplete forms. In certain cases, specialisation in any particular part of the whole has given rise to a separate industry altogether. Spinning, weaving and dyeing are separate industries, all connected with one another. They exchange their products to run the whole machinery of production.

When goods are produced, that is not the end of production. The object of production is achieved, only when goods have found their way into the possession of those persons who want them for the satisfaction of their wants. Hence arises the necessity of transferring those goods to widely scattered consumers or buyers. This passing of goods is now-a-days managed in most cases through the agency of wholesale merchants, retail dealers, bill-brokers, bankers and many other intermediaries. All these play their part, and sometimes an important part, in assisting the process of production. Thus exchange is a necessary link between production and consumption.

But it is not exchange alone which is necessary

for production and consumption. Production is also essential for exchange. For, if nothing is produced, nothing is exchanged; if more is produced more is exchanged. The activity of exchange comes into play only with production. Thus production and exchange are inter-related.

**Production and Distribution.** The production of wealth is influenced by its distribution. If wealth were equally distributed, the difference between the rich and the poor would greatly diminish and with it would also decrease the production of luxuries which are consumed by the rich. Again, if inequalities in the wealth of different classes disappeared or at least were minimised, people would be better fed, clothed and housed. Their productive efficiency would be increased and therefore the total amount of wealth produced would also be increased. The parents would be able to give a better education and training to their children and thereby make them more efficient producers. In some cases, the working hours of the producers might also be reduced, without affecting the production of wealth.

Conversely, the distribution of wealth is also influenced by the amount of wealth produced. If a greater amount of it is produced, the question of

distribution leads to all sorts of problems, e.g., who is entitled to the increased output, the landlord or the labourer or the capitalist or the organiser, and how much should go to each of the four agents, if all of them are entitled to it, etc., etc. More disastrous than probably the war itself are the strifes which sometimes result on account of the sharing of wealth among the various agents who co-operate to produce it. Hence distribution is a problem which is intimately connected with production.

Thus production and distribution are inter-dependent.

**Exchange and Distribution.** Under modern industrial conditions, the distribution of wealth is affected by means of exchange. The share which goes to each agent of production represents the value which has been assigned to the service rendered by that agent in the production of wealth. That the value of each share is dependent upon the demand for and supply of the agent concerned, is evident from the fact that if land is scarce, high rents must be paid and if labourers are many, wages will be low, and so on.

From another point of view, the exchange-value of a commodity depends upon the theory of distribution. For, the efficiency of each agent as

a producer, upon which is based his share or the exchange-value of his service, depends upon the amount of the joint-product which he receives and this amount depends upon the principle followed in the matter of distribution.

Hence exchange and distribution are intimately related to each other. All this discussion makes it quite clear that the four departments of economics are so inter-dependent that they cannot be divorced from one another.

### EXERCISES

1. Show in what manner economics is related to other social sciences.

2. Most wealth in this world is produced by dishonest means. Will you exclude all such wealth from the study of economics?

3. Is economics wedded to ethics and politics? If so, how and why?

4. Is it true to say that 'economics without economic history has no root and economic history without economics has no fruit'?

5. 'Nature has placed mankind under the governance of two sovereign masters—pain and pleasure. It is for them alone to point out what we ought to do as well

as to determine what we shall do'. Is economics anchored in psychology?

6. How far, in your opinion, is the following statement correct?

'Economics only teaches us the material side of the growth of wealth or of things that contribute to human well-being . . . . . ; but no nation can be rich either in goods or in culture without much strength of character.'

7. What do we study under the department of exchange? Name those topics that are common to production and exchange.

8. What is the purpose and end of all production? Is it wrong to say that 'we produce not to feed and clothe one another, but to make money'?

9. Do you agree with the following? Give reasons for your answer.

'It is not consumption that guides and controls production but production that determines what men shall consume and how much they shall consume'.

10. 'India produces at any rate enough agricultural produce from year to year to satisfy the demands of her total population, and yet every year thousands die of starvation or are on the verge of death through starvation'. What is wrong with our country? What remedies would you suggest to improve this state of affairs?

11. How far is it true to say that theories of distribution and exchange cannot be discussed to any purpose in isolation?

12. 'There is always a small minority of men with large incomes who wear several men's clothes, eat several men's dinners, live several men's lives.' How does this affect the production of wealth?

13. 'The world is a union of producers, and whoever squanders labour, labour-time, or the means of labour is robbing the community'. Is production undesirable?

# CONSUMPTION

## Chapter I

### INTRODUCTION

**Importance of consumption.** It has already been discussed that consumption reacts powerfully on all the other departments of economics. It controls production and directs exchange. It affects the share of labourers in production through their productive efficiency. It determines the rate of the accumulation of capital. The subject of consumption, therefore, is the one which deserves the greatest attention at the hands of the economist. Its importance is being gradually recognized. There is a growing tendency among the recent writers to give it the first place in the study of economics. Carver in 'Principles of Political Economy' went so far as to say that 'consumption is more important than production, exchange, or distribution—possibly more important than all three combined'. Since the Great European War of 1914, this section of economics has secured greater prominence. War has made men seriously to realise how wasteful, irrational and insuffi-

cient consumption tells adversely upon productive efficiency of a nation. They have learnt, though not without much cost of human life and national prosperity, that as many and as serious calamities can follow from unwise consumption as from inefficient production, exchange and distribution. This has led almost every modern thinker to change the emphasis from production to consumption. The authors of this book also believe that the theory of economics must begin with the theory of consumption. Wants which are at the root of all human activity must be the first to receive our attention and consideration. But before a study of them should begin, it is necessary at this stage to say what we mean by the term 'consumption' in economics.

**Meaning of consumption.** Literally consumption means destruction. From this point of view, when wood is burnt, it is said to be destroyed. But a scientist would not say that wood is destroyed. From his point of view, nothing is destroyed. The charcoal and the ashes which result are there, and the smoke with other gases escapes into the atmosphere but is not lost. Matter being indestructible, he is quite right in his opinion and from his angle of vision things may change their



form as wood does when burnt but they can never be completely destroyed or ended.

From the economist's point of view, destruction does take place; but according to him what is destroyed is not matter but the capacity of the object to satisfy a want, although this is not the necessary condition in all cases. If wood is burnt, he would say that wood as *wood* is destroyed. Not only is its form changed, but it can no more serve exactly the same purpose as it was capable of doing before. Hence as he would take it, wood is consumed. It does not matter, according to his ideas of consumption, whether the wood was burnt to supply warmth and give a man direct satisfaction, or it was burnt to supply heat-energy for cooking food and thereby give him only indirect satisfaction. So long as the satisfaction of a human want, be it direct or indirect, is involved, the wood must be said to be consumed; otherwise not. If a house catches fire and the wood burns, that is not consumption, because fire is not set to this wood for the purpose of satisfying some human need. Wood may also be used for making a table, it is then consumed, because it is intended to satisfy a human want. Destruction in the process of consumption, however, is not incidental in all cases. Thus, in

the economic sense, books, novels or newspapers are in the process of consumption, when we read them; so are the houses in which we live, and the pictures that hang on our walls. In a few cases, the object becomes more useful, as its consumption proceeds. For instance, the nib of a new fountain pen becomes set and more serviceable after it is used for some time. A pair of shoes may not fit as well in the beginning of its use as it does later. A harmonium may not be so melodious to hear when it is new as it is likely to be after a few month's use.

To sum up, consumption in economics is equivalent to utilization and to consume simply means to use. Every act of consumption invariably gives satisfaction which may well serve as a test to find out whether an article is consumed or not.

### EXERCISES

1. Should consumption come first in the study of economics? Give reasons for your answer.
2. Define clearly the meaning of the term 'consumption' as used in economics. Consider whether the following are the cases of consumption:
  - (a) If wheat is ground into flour.

(b) If a room is decorated with buntings and flowers.

(c) If a barber shaves beards.

3. 'Consumption is not merely the art of eating; the word must be taken in a wider sense to cover the best possible use of the wealth that is available'.

'Consumption in economics means the use of goods in the satisfaction of human wants'.

Which of these two definitions do you prefer and why?

4. 'A thing is said to be *used* if it suffers no loss of material as the result of pleasure being derived from it; on the other hand it is said to be *consumed* if the derivation of pleasure entails the loss of the whole or part of it'.

In the light of this definition, consider whether the following articles are usable or consumable.

Food, clothes, matches, books, pictures, soap cakes and cut flowers.

5. 'Consumption of anything simply means the destruction of its utility'. Is this definition correct? Do you consider the inhabitant of a house its destroyer? Is it not a fact that a house is destroyed much sooner if uninhabited?

## Chapter II

### WANTS

**Wants and Desires.** Every one of us in this world, be he young or old, rich or poor, requires something or the other to meet his daily needs. A school-boy, for example, requires a pencil or a note-book which he may buy at a stationer's shop. He may possibly desire to have a hockey-stick when he sees one at a shop, but may not be willing to pay the high price asked for it. He may eagerly long to have a bi-cycle, but may be too poor to afford the expenditure. A clerk, in the same way, may wish to have a fancy tie and get it by paying for it. He may like to possess a hat as well, but may be prevented from doing so because of its high price. He may strongly desire to have a Waterman's fountain-pen, but may have to put off his desire for it on account of his low pay. A beggar also may have a great craving for a loaf of bread at a baker's shop, but is utterly penniless to buy it.

Now, so long as desires such as those for hockey-stick, bi-cycle, hat, fountain-pen and loaf

of bread exist only in imagination without being actually satisfied either because the purse does not permit or because the people are not willing to pay the high prices, they are mere wishes, likings, longings, or cravings; they are not effective desires, because for one reason or the other the desired articles would not be had and consumed. Desires become effective only when people have both the means and the willingness to part with them. The desire of the school-boy for the pencil or the note-book is effective, only when he has the necessary amount of money and the willingness to give it in exchange. The clerk's desire for the tie is effective, only when he possesses the means to buy and is willing to pay the price asked for it. These effective desires alone are known as wants in the economic sense of the term. Our beggar's desire can also become want if the baker agrees to give the desired loaf in consideration for some service which the beggar is willing to perform for him. When we speak of wants in economics, it remains implied that we are prepared to make an effort or a sacrifice in order to satisfy them.

In primitive days when people did not exchange goods, their desires could not become effective, unless they made efforts and secured the

objects of their desires.

**Wants, the motor force of all economic activity.** What do you see, when you walk through a busy quarter of your town? You see people bustling about in all directions, some moving hither and thither to hawk the goods they carry, some rushing in to make their daily purchases, some flying away on tongas, ekkas or cars on business, some hurrying to their shops or to the railway station, and some coming out while others getting into the workshops. On one side of the street, you may find a long line of cloth-merchants or dealers in brass-wares with the customers engaged in higgling and bargaining with them; and on the other side of it, a row of toy-merchants absorbed in conversation with a few customers to whom they want to sell their goods exposed in their show-windows. As you move on, you may notice tailors, goldsmiths, mechanics, grocers, fruit-sellers and many others, all of whom are doing something or the other. The tailors, for example, might be taking measurements for the clothes ordered with them, the goldsmiths shaping ornaments and the mechanics preparing tools and instruments for domestic or industrial purposes.

If you come from a village, you know full

tell how hard is the life which a cultivator leads. From early morning till late in the evening, he is in his field, ploughing or sowing or weeding or harvesting or threshing. Sometimes he stays for several nights together upon his fields to scare away birds or wild animals that may damage his crops. Not he alone, the whole of his family is at work. And almost similar is the case with the weaver, the potter, the blacksmith and the carpenter of the village, although probably they do not toil as hard as the cultivator does.

Hardly will there be found a man who has nothing to do. The coolies labour; the carters ply; the coachmen drive; the boatmen row; the fishermen fish; and the masons build. What for? Why are peasants, artisans, shopkeepers and all other village people busy in feverish activity like bees in a hive specially on market days and during harvesting season? Why is all this hubbub, worry and bustle everywhere? Certainly there must be a purpose,—a motive behind it all. What purpose or motive can there possibly be, you may like to ask? The purpose is the satisfaction of wants which human-being is devoid of. It is human wants in fact, that provide the motive for work and lend impetus to continue it. They are the motor force,

so to say, that sets all economic activity agoing. Annihilate these wants and all economic activity of men will automatically be brought to a dead stop. When human wants would not exist, what for would a cultivator toil to grow food, what for would a manufacturer make goods and what for would a carpenter or a potter work? When the connecting link of mutual dependence would be broken, why should the students read and hanker after services, why should the universities run or the competitive examinations be held at all? The whole structure of economic activity which we witness today would then crumble down and vanish like a dream. Men without wants would be just like statues wanting nothing, doing nothing, and feeling nothing.

But human wants have existed ever since man was born. They were few in the beginning, but all the same they had to be satisfied. Primitive men could not bring about their satisfaction without making efforts. Driven by hunger, they had to climb up a tree, pluck off fruits and eat them; and goaded by thirst they had to walk upto a stream, have a drink of water and quench it.

**Wants, the basis of material advancement.** Food and drink were not the only things



a savage wanted. He required many other things besides. To protect himself from the extreme heat of summer and from the intense cold of winter he used bark or big leaves of trees for clothing. To lay himself in during wintry nights, he dug a den or searched out a hollow of some old tree. In summer, of course, he needed no other shelter at nights except the canopy of the sky studded with shining stars. But for all that, he was no better than the wild beast which roams about in search of food and drink, depends upon its covering of hair for protection against the inclemencies of weather, and retires for repose to its den.

Such a state of backwardness, however, did not last for ever. By and by the savage learnt to hunt and later on to kindle fire which became the harbinger of civilization. Raw flesh was now given up for roasted meat, and gradually the taste for a change developed until at last several varieties were introduced in his food. He was thus emerging out of a state of backwardness and marching on the road to civilization. As days rolled on, his knowledge grew and he was able to do many things which the animals could not. He learnt to put up a few branches of trees and cover them with grass and leaves to prepare a shelter for himself where he

could rest and sleep more safely and comfortably. He also learnt how to knit together the stalks of grass and make a mat-work to serve for clothes. By watching the brilliant feathers of birds, or by fancying the colour scheme on the bodies of animals, he was so deeply impressed that he at times decorated his own body with bright leaves and flowers and feathers. Thus with every growth in his knowledge of his surroundings and in his power of using them to his advantage man made progress. His wants grew in number and this growth in wants continued with the result that he went on rising in the scale of civilization till the present state was reached. Now a large number of things are required to satisfy even such wants as food, clothing and shelter.

The growth of civilization is comparable to that of a child. Just as a growing child experiences new wants unknown to him before, so does a progressive society. But a child would not properly grow unless its new wants are fulfilled; similarly a society would not make any progress, unless the means are also discovered by which to satisfy its new wants. Hence material advancement consists not only in awakening wants but also in providing for their satisfaction.

## CHARACTERISTICS OF WANTS

**Wants in general are insatiable.** Wants are born with man. As he advances in age, so do they increase in variety and complexity. While an infant, his needs are but few. A small amount of milk and clothing is all that he requires at that time. As he grows up, he needs a larger quantity of them, and also toys of various kinds. Later on he desires to have sweets, rice and bread. When he is sent to school, a few more wants spring up. For instance, he begins to need books, pencils, ink, paper and several other things. His wants for dress also becomes larger and varied. He uses shirts, coats, dhotis, pyjamas, caps, socks and shoes. When he leaves school and joins a college, his needs become all the more numerous. He now uses fashionable suits, ties and collars; he has special kinds of clothes for sports, for dinner, for night dress and so on. His drinks range from plain water to all sorts of aerated water. He takes to chewing pans and smoking cigarettes. When he leaves college, his wants even then do not come to an end. If he is an ambitious fellow, he wants probably to proceed to some foreign country for a higher degree; or he wants to sit for some competitive examination. In

this way, as he grows up and associates with his fellow-beings, his wants multiply. His education creates in him a further desire for books, periodicals, newspapers, writing pads, fountain pens, shaving sets, sanitary surroundings, well-ventilated dwellings, electric lights, cinema shows and so many other things which we can have today. With age his wants grow and go on heaping one upon another. They are, as we would say, progressive.

Similar is the case with a savage at every step in his progress upwards. *His first and foremost motive is to preserve life* and for that purpose he makes every effort to provide for all that would keep his body and soul together. When all that is necessary for his existence, is provided, he begins to long for a larger quantity and a greater variety of what he has been used to consume. Later on he wants his coarse food to be replaced by such variety as wheat, rice, ghee, vegetable and all sorts of spices and flavours. He is no longer satisfied with his plain, simple clothing just enough to cover his nakedness. He now wants a complete dress. Not that alone, he wants many more for a change, such as warm woollen clothes for the winter and silken ones for the summer. This desire for variety acts as a powerful motor force to set his manifold acti-

vities agoing which give birth to fresh desires for hospitality and display. As a result thereof his food, dress and dwelling become not only varied but rich and costly also. At this stage he begins to seek distinction in all his articles of use, till at last he is overtaken with the *desire for social distinction, the second great motive of man*. Now in addition to what he already has, he aspires for all those things which are not possessed by his neighbours. If his neighbours have horses to ride on, he wants to have a tonga; and if they possess tongas, he wants to have a motor car. Desire for social distinction is the most powerful of all human passions. It affects all men and at all times and dies only with them. Such an endless variety of wants it brings in its train that for all that lies in man's power to satisfy them, he always finds himself only striving after an ever-receding goal.

Every effort which is made to satisfy a want not only brings about its satisfaction but also gives rise to other wants which were not felt before. For instance, if a door is needed, it creates wants for wood, nails, tools and instruments. The services of a carpenter are also wanted. Again, demand for wood leads to a further demand for the services of lumbermen and saw-men. Axes and saws arouse

the necessity for the services of mechanics, and iron-ore for those of miners. Thus for the satisfaction of such an ordinary want as that for a door so many other wants have to be satisfied. This may not appear so at first sight, yet a little insight into how things are prepared, would convince one of this endless chain of wants created by a simple want.

As noted before, for the satisfaction of wants hard work has to be put in. Such work is monotonous and severe and it tires man and creates in him a desire for distraction or recreation. Hence arise wants for games and sports of various kinds.

With work comes also the desire to excel or improve and this leads to wants for better tools and skill in using them. It is due to this desire that we find so many types of ornamental work with curious and complex designs. It is due to this desire that man has set his mind to make researches and inventions. It is due to this desire that art and industry are so developed today and we are able to get many new things to satisfy our wants in a new and better way.

The joy of work itself leads to activities which give rise to new wants, for instance, the inward craving for pure pleasure finds expression in sing-

ing, dancing, painting and poetry, and brings in its train a multitude of wants for such goods as musical instruments, dancing costumes, painting materials and others. Desire for painting, poetry and others is the *desire for self-expression, the third supreme motive of man*. This motive in its highest form is almost purely unselfish.

Thus throughout the history of mankind, wants and activities react upon one another. Wants evoke activities first; activities in their turn evoke fresh wants; these fresh wants again cause new activities to arise in the effort to satisfy them. Wants and activities in this way comprise the circle of man's economic life. Life-long we all move in it either successfully or unsuccessfully, but we never come to an end of wants. This simply leads us to conclude that *wants in general are insatiable*. Had it not been so, the savage would have ever dwelt in darkness and misery, and would not have been raised to the state of modern civilized man. For, man, by nature, is so made that unless he has some hard work to do, some difficulties to overcome, he is sure to degenerate. It is because of man's leading a life of discontentment that economic progress has been possible and is still continuing on its march onwards. But discontentment is an effective in-

strument in the cause of economic progress only so long as it does not destroy the peace of the people, nor interfere with their enjoyment.

It may be said that the primitive man was not satisfied, because his knowledge was scanty and the means of satisfying his wants were but few. But the modern man also is not satisfied even when to-day he has at his disposal all that knowledge which has been accumulated through centuries of progress by hard and persistent labour; all that huge stock of tools and machines which have been perfected to a high pitch of efficiency and made only to aid him in his work; and all that facility of easy and quick access to distant lands rich in vegetable and mineral products, which was not even dreamt of before. Even the richest, not to speak of the poor, complain that they are always wanting something or the other. The reason is that new wants are arising due to increased knowledge, and knowledge is constantly increasing through education and through the extension of trade and the facility of travelling that has followed the construction of railways. People go about freely, quickly and cheaply. They come across many things and begin to desire them. Things also move far and wide; they come to sight and a desire for them is kindled



in the hearts of men. People had no knowledge of gramophones and moving pictures before they were invented, and consequently they never felt a want for them. But ever since the talking machines and pictures were made, a want for them has been growing rapidly.

With such amazing rapidity wants grow and multiply that they seem to mock, as it were, the strenuous efforts of man to satisfy them, and it is not likely that economic progress will ever lead to a condition in which the people will have all their wants completely satisfied.

When we say that a man such as a religious ascetic is satisfied, we simply mean that he is fully contented with what little he has to satisfy his needs; we do not mean that he has no want which remains unsatisfied. It would not be possible for every want to be fully satisfied even if it were supposed that man's wants were fixed and non-progressive. For, some of his wants are such as are bound to be felt again and again, even if once they are satisfied. A glass of water, for example, would not quench his thirst for ever, and a meal in the morning would not appease his hunger for good. These are *recurring* wants unlike those for a car or a house which are satisfied for a very long time to come, and

they must, therefore, continue to repeat themselves till a man continues to breathe.

**Wants for substitutes are competitive.**

When the same purpose is served by more than one commodity, wants for those commodities are said to compete with one another. For instance, hunger can be appeased by rice, bread, or fruits. Wants for rice, bread and fruits, therefore, compete with one another. Thirst can be quenched by *sharbat* or lemonade. Wants for these two things, therefore, compete with one another. If the rate at which rice, bread or fruits sell be the same, that one out of these three articles will be chosen which satisfies hunger best. If, however, the rate is not the same but the three articles are equally good in satisfying hunger, then the one which is the cheapest will be chosen. The same is true for *sharbat* and lemonade. Naturally that one will be preferred which best suits the consumer's taste and pocket. Commodities which serve as the alternative means for meeting the same purpose are called substitutes or rival commodities. In the above illustrations, rice, bread and fruits are substitutes, and *sharbat* and lemonade are substitutes. Such *wants for substitutes are competitive*.

A passenger may like to go a certain distance

either by a railway train or by a motor bus. A student may choose to spend his evening either in a picture palace or in a theatrical hall. In each of these two instances, if the substitutes demand the same expenditure of money, then evidently the choice must fall upon the one which is more serviceable or enjoyable. But if different amounts of money have to be paid for them and the benefits to be derived are exactly equal, the decision is bound to be in favour of the cheaper one. In actual life, rival commodities have neither rates nor enjoyments equal; hence the preference naturally goes to that article which is least expensive and at the same time most serviceable in meeting the need in question. In a few special cases it might happen that even if an article is costlier, it is preferred to its rival articles, because the consumer is in the habit of using it and consequently considers it more valuable to himself than the amount of money paid for it. Tea and Coffee usually present such problems, provided the consumer can afford the expenditure. But if the consumer is not sufficiently rich, he may be forced to go in for the cheaper article, even if it cannot satisfy him so much as its rivals can. Rice is sometimes preferred to wheat on this account.

Religious prejudices may altogether eliminate the question of substitutes and thus stop competition among the wants for them, but the substitutes do not cease to be substitutes for people other than those who follow those religions. A hindu for example, may not even think of taking beef and a muslim of taking pork, because their respective religions forbid them to do so; but to a christian they do not cease to be substitutes and therefore wants for them are competitive in his case.

**Wants for certain commodities are complementary.** While wants for substitutes compete with one another, those for certain other commodities are complementary. There are articles which must always go in groups before satisfying a human want. For example, a fountain pen must be accompanied by ink and a motor car by petrol, before they can be of use to a man. Hence ink and petrol without which a fountain pen and a car are useless are called complementary articles to a fountain pen and a car, and the wants for ink and petrol are called complementary wants. The wants for a fountain pen and a car are basic or original wants, because they must always arise before those for ink and petrol.

The want for an article may be both basic

and complementary according as it goes along with a complementary want or a basic want. The want for a horse is basic when it goes along with that for a saddle, and complementary when it goes along with that for a carriage.

### EXERCISES

1. Clearly distinguish between (a) desires and wants; (b) 'want of hunger' and 'want for food'.

What is meant by 'effective desire'? Name some of your effective desires.

2. 'If we were to cut down our wants to the simplest—bare necessities of life, we must read backwards the whole recent history of economic progress'. Why does Mahatma Gandhi then advise his countrymen to cut down their needs to mere subsistence level? Does he want them to relapse into the inactivity of savage life? Is progress impossible without wants?

3. 'Human wants are the motive force for all economic activity'. Explain and illustrate.

4. 'It is not likely that the progress of India will lead to a condition in which a larger proportion of the people are completely satisfied than is the case at present'. Why? Is it true for India alone or for all countries? Can't you say that sadhus and fakirs are

satisfied? What about the villagers who live far from the railways?

5. 'The old must make room for the new'. Is this the same thing as to say that wants are competitive? Does the want for food compete with that for water? Can the want for boots take the place of that for books? Don't you agree that only the alternative means of satisfying a certain want can compete with one another? Clear the ambiguities, if any, with regard to this characteristic of wants.

6. 'There is competition among wants of the same sort, among wants that are interchangeable; but there is harmony among wants of different kinds'. Which of the commodities around you are allied and which are rival? Give reasons for your answer.

7. What is exactly meant by saying that wants are complementary? Examine the following statements and correct them where wrong, making as little change as you possibly can:

- (a) A cow is complementary to fodder.
- (b) Tennis balls are complementary to tennis rackets.
- (c) One boot is complementary to the other of the pair.
- (d) Bread and butter are complementary to each other.

- (e) A railway carriage is as much complementary to an engine as an engine to a railway carriage.
8. Enumerate the chief characteristics of wants and examine them critically.

## Chapter III

### SATIABLE WANTS

**Wants taken singly are satiable.** Wants in general are insatiable, but if any one want be singled out, it is usually satiable for the time-being. From our commonest experience of life we know that howsoever thirsty a man may be, there is a limit beyond which he cannot possibly drink; howsoever hungry he may be, he cannot eat more than what his stomach has the capacity to hold; howsoever interesting a novel may be, it is bound to pall on the reader if its reading is unduly prolonged. In short, the larger is the quantity or the longer the duration of any means of enjoyment, the sooner are we fed up with it. The same holds good for house accommodation and attire. A man's want for shelter is satiated by one house reasonably suited to his taste and means. He does not need any more for the purpose of accommodation, but he may desire to possess more, for he wishes to let them or put them to some other uses. Similarly, his want for dress is satiable notwithstand-



ing the fact that there is room for greater change and variety in this case, because given a particular time there is a definite limit to the number of articles which he can possibly use for his dress. Even want for gold is satiated sooner or later. We all know the story of king Midas who got so much gold that he finally loathed the sight of it.

It follows, therefore, that the capacity of a man to consume a thing or things at a particular time is limited. In some cases this limit is reached sooner and in others only later. But there is no gainsaying the fact that unless a person desires to possess a thing for the sake of mere possession, his want for it is capable of being satisfied at least for the time-being.

The desire for self-expression, the love of display, the lust for power, and the miser's thirst for wealth may be cited as some of those instances where a man is hardly satisfied. There is no doubt that all of these are practically insatiable, but it is very much doubtful whether they fall within the purview of our science. Self-expression is the desire for bringing out the inner feelings in the form of paintings, poems, books or sculptures; it is probably the noblest part of human nature. But the man who has that desire does not paint pic-

tures, or compose poems, or write books or carve sculptures with the object of selling his products and thereby earning his living. His object is to derive pure pleasure which he gets from those activities. Hence the desire for self-expression cannot be regarded as the economic want, so that the question of satiability does not at all arise in this case. The love of display drives a man to spend money in order that other people may be impressed by the magnificence of his belongings which are usually rare or costly or such as his neighbours do not possess. It is thus a want for many articles of display such as palatial buildings, expensive clothes, valuable jewellery and precious stones, fine carriages with beautiful horses, motor cars, and the like. There is no limit to the variety of such articles, so that if the want for one of them is satisfied that for another springs up. Satisfactions for the moment come but they fade away after some time, and the wants reappear. Thus the man is never completely satisfied. The love of display is not exactly a single want, but the sum total of a very large number of single wants. That is why it is insatiable.

Stronger than the love of display is the lust for power. It is the most powerful passion which

affects all men and at all times. It is simply a feeling, not an economic want. It is the desire for distinction which comes with us from the cradle and goes with us into the grave. Hence so long as the man lives, it is with him and is never completely satisfied.

A miser is a person whose thirst for money is never slaked. He is mad after money, not because he wants to make a display of it, not because he is anxious for power or position, not because his wants are too many and he wants all that money to satisfy them. He wants money only for the sake of money. His real pleasure lies in seeing the heaps of hoarded wealth, and the more he has of it the more he wants it. He is, in fact, an extraordinary man—a man with whom the economist has nothing to do. Hence even if a miser's appetite for wealth is insatiable, it is outside the limits of economics.

Thus with the exception of the love of display, all the others are excluded from the subject of economics. The love of display is not an exception to the general statement that wants taken singly are satiable. It is not one want but several wants combined in one and therefore the love of

display is as much insatiable as wants in general are.

Now, before the satisfaction of a single want be further considered, it is necessary here that the meaning of the word 'satisfaction' be thoroughly discussed and understood.

**The meaning of 'Satisfaction'.** By the term 'satisfaction' a little more is meant in the usage of economics than in ordinary speech. When a man feels thirsty and gets a drink, his thirst is quenched; he gets pleasure. When he wants to play hockey and gets a good game, he feels elated. When he gets a smoke after dinner, he enjoys it. In all these cases when the thing wanted is received and consumed, his want is satisfied and he feels pleasure. The things give him satisfaction. All of us feel satisfaction if we are able to sit down when we want, or if we are able to go out when we like.

Similarly, when a hat is put on under a hot sun, or a raincoat on a rainy day, none yields any distinct sensation of pleasure, but they surely ward off pain. The hat keeps off the sun and the coat shuts out the rain. And the greater the pain which is warded off, the greater the satisfaction derived from the contemplation of the fact that

it is avoided. When we have rough ground to walk over, we use boots; we simply ward off pain which would otherwise be produced. Hence boots also afford a similar kind of satisfaction. When we place ourselves in the hands of a dentist for taking out a tooth, we suffer pain but we have the satisfaction of knowing that toothache would not trouble us any more in future. When we are down with malaria, we take quinine; it is bitter to taste, but if the fever is cured it gives us satisfaction for we are benefitted by it. In short, we feel satisfaction even if our pain is warded off. Hence a thing is said to give satisfaction, when it gives pleasure or wards off pain; and if it has such a power of giving satisfaction, it is said to possess utility.

**Utility.**<sup>1</sup> Utility may be defined as the power possessed by a thing in respect of a certain person of giving him pleasure, or warding off his pain. The person in question may actually consume that thing or may only anticipate its consumption. For example, the cap which I am using has utility for me, and that also has utility for me which is in my box and which I am thinking

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<sup>1</sup> Utility is also known as 'value in use'.

of using at some future date. But the cap which is in a merchant's shop has no utility for me. If I have money to buy it with, I may anticipate with pleasure the consumption of that cap, but the pleasure which I shall derive will come from the money and not from the cap. The cap itself has no utility until it comes into my possession. Hence a thing has utility to a man only when it is possessed by him and it is said to be possessed by him if he has the right to use it either on payment or without it. A man can enjoy a natural scenery merely by looking at it; he can consume air, water, or light without making any payment for them; he can use a building or a railway train by making the necessary payment. In all these cases he possesses them so long as he can use them.

The idea of utility should not be confused with usefulness. For even if a thing is hurtful to a man, it may possess utility to him. Utility has nothing to do with usefulness or moral approbation. A thing is said to have utility if it is desired, produced, exchanged, and consumed. A sword or a gun has utility, because it is wanted, purchased and used, though it may destroy human life or property.

**Utility is a relative attribute.** Water

does not possess utility simply because it is water. It is endowed with utility when it is in the possession of a man who intends to use it or actually uses it. A glass of water in the hands of a thirsty man has utility for him, because it is supposed to gratify his need for a drink. If he drinks it immediately, he derives immediate pleasure. If he postpones its drinking for a little while, he derives prospective pleasure. But a glass of water has no utility to a man who has no want to satisfy with it. Utility exists only in relation to human want.

**Utility differs with use.** A thing may have little or no utility if put to one use, but may have great utility for some other use of it. A cup of water can be used for washing, shaving, drinking and other purposes. If used for washing purposes it may not give as much satisfaction as it does when used for drinking purposes. The man going to use it may not need it for drinking, hence it has no such utility for him at that time; but he may need it for a shave, and then, of course, water acquires utility for him. A razor blade may be too blunt to be used for shaving and therefore may not have any utility for that purpose, but it may have excellent utility for mending pencils or cutting paper.

In the same way, a copy of the Leader may be required by a man either because he wants to read it or because he wants to light his fire. Therefore if for one use of it, he derives no satisfaction, for the other he may. Illiterate persons may need newspapers or books, because they want to deal in them. Those papers and books then have utility for them.

**Utility differs with time.** A thing may not be serviceable to a man at one time but may become so at some future date. To a student going for High School Examination a book on economics has no utility as a text book, but will come to acquire utility on his offering that subject for Intermediate Examination. Ice has no utility for drinking in winter, but if stored, will be relished in summer. The daily newspaper after it is read ceases to have any such utility except for the cuttings to be used for references.

**Utility differs with place.** Mere change in place sometimes causes things to possess high utility. Wheat in the Punjab, where crops have been very rich, may have less utility, but will be more useful if brought to the United Provinces where it is scarce. Stones near a quarry are not so serviceable as in a builder's yard. Similarly the



wood on the Himalayas or the grass in the forest is not so useful as in cities or villages where people want it to make fire or to feed their cattle.

**Utility differs with the growth of knowledge.** Human knowledge is ever widening and with this growth of knowledge his capacity to put a thing to different uses is increasing, his tastes are getting refined and his power to appreciate or enjoy things is developing. By greater association with nature and its deeper study with the help of trained faculty of observation and efficient instruments new properties of the articles are being discovered and brought into use more and more to give greater satisfaction. Copper was used for sheets and utensils before the invention of electricity. Now it is used for transmission wires and generators. Rocks, which once were considered useless, are now utilized to yield potash to fertilize soil. Rags had their utility increased when paper began to be made from them. To take another example from the life of individuals, a musical instrument, say harmonium acquires greater utility to a person when he learns how to play upon it.

**Measurement of Utility.** Utility varies in intensity in accordance with the intensity of the

pleasure which it creates, or the intensity of the pain which it wards off. A boy may get more pleasure from an anna's worth of sweets than from an anna's worth of kites. To express relations in which these pleasures stand some method of measuring satisfaction is necessary. The method usually employed is the one in which arbitrarily chosen arithmetical numbers are used to express satisfaction. For instance, if the boy derives from the sweets twice as much satisfaction as he does from the kites, the two satisfactions are expressed by assigning some number taken at random to represent the satisfaction derived from the sweets and half of that number to represent the satisfaction derived from the kites. Thus if it is said that the sweets yield satisfaction which may be expressed by the number 30, the satisfaction derived from the kites is then necessarily put as equal to 15. If 40 or 50 or 100 be selected to stand for satisfaction from the sweets 20, 25 or 50 will be used for the satisfaction from the kites. These numbers, 30, 40, 50 or 100 and 10, 15, 25 or 50 serve no other purpose than that of giving a comparative idea of the two satisfactions. These numbers are spoken of as units of satisfaction or degrees of utility. If it is to be shown that the first

orange consumed satisfies more urgent want than the second orange, and that the enjoyment is thrice as great from the first as it is from the second, then on the basis of the method used for measuring satisfaction the satisfaction derived from the second orange will be represented by 10 provided the first gives 30.

Sometimes the satisfactions are measured in terms of money also. For example, it may be said that a copy of the *Leader* gives as much information as would probably be got by spending twelve annas to get it otherwise. Hence the copy of the *Leader* is said to give satisfaction which can be expressed by twelve annas. Similarly a glass of *sharbat* may yield as much of satisfaction as would probably be got from three oranges costing four annas and therefore the glass of *sharbat* may be said to give satisfaction which can be measured by four annas.

### EXERCISES

1. 'But no man is satisfied with so limited a range of enjoyment. Man's first object is to vary his food; but this desire, though urgent at first, is more easily satisfied than any other, except, perhaps, that of dress . . . . . Last comes the desire to build, to ornament, and

to furnish—tastes which are absolutely insatiable where they exist, and seem to increase with every improvement in civilization’.

How far do you agree with this statement?

2. ‘Every single want is satiable’. Do you know of any exceptions to this? Are they real or apparent?

3. ‘The more natural a want is . . . . . the more clearly drawn is its limit . . . . . But the more artificial or social a want is, the more elastic is the limit marking its satisfaction’. Support this statement by concrete examples.

4. Explain clearly the meaning of ‘satisfaction’. Does it necessarily attend consumption? The wearer of shoes is said to consume them. Does the process of consumption continue even when they pinch him? A boy derives pleasure when he flies a kite. Does he consume it?

5. Define ‘utility’. Comment upon the following definitions of utility:

- (a) ‘Utility is that quality in things by virtue of which they afford satisfaction and enjoyment to those who possess them, or create a desire in persons to get possession of them’.
- (b) ‘Anything which an individual is found to desire and labour for must be assumed to possess utility for him’.

(c) 'The capacity for satisfying human wants is called 'Utility' '.

6. Is 'utility' an inherent quality of a thing?

Discuss the following statement:

'Utility arises only with desire and vanishes with the extinction of desire. As a shadow follows a butterfly from one flower to another, so utility accompanies desire, and abides only where desire rests'.

7. Do you consider 'man' or 'usefulness of the article' to be the more important feature of utility? Can the tools of a house-breaker and wine be said to possess utility? What is your opinion with regard to the following definition of utility?

'The word 'utility' seems to suggest things really useful, but in fact it means no more than things desired, bought and sold'.

8. What are the chief features of utility? Consider whether the following possess utility:

- (a) A pair of spectacles with a blind boy.
- (b) Gold in the sun or under the sea.
- (c) A revolver in the hands of an assassin.
- (d) Snow on the Himalayas.
- (e) Night-soil of a house.
- (f) Railway time-table for the year 1910.
- (g) Electricity produced by clouds.

## Chapter IV

### THE LAW OF SATIABLE WANTS

**Diminishing Utility.** It has already been stated that every single want is capable of being completely satisfied for the moment. To a man who is dying of thirst, the first cup of water must give unthinkable pleasure; the second will give great pleasure though not so high, because it is taken at a time when thirst is less intense. As the drinking is continued the intensity of thirst gradually falls and with it falls the intensity of pleasure too, until at last a state is reached when the man wants no more of water. He is fully satisfied for the moment. With the gradual satisfaction of his thirst goes a corresponding fall in the intensity of the pleasure which water yields him. In other words, he derives diminishing utility from water. If a man eats a meal, he experiences a similar gradual fall of intensity of pleasure, as the meal is continued. The same is true of dress. One shirt is necessary; a second and a third may add to comfort. More and more can be used, yet with a steady tendency

to lessening satisfaction from the successive instalments.

To put these facts in figures, the first cup of water sustains the life of the man. Its utility, therefore, is so great that it cannot be measured. The satisfaction which the second yields is less than that of the first and may be expressed by the figure 100; the third yielding less than the second may be supposed to give satisfaction equal to 70 which means nearly three-fourths of the satisfaction got from the second; and so on, each additional cup yielding less than the one preceding it. Similarly for the meal. The first mouthful may yield 200 units of satisfaction; the second which gives him less than the first, may give 150 units and the third still less, say 90; and so on.

As with water and meal, so with every other commodity; as with a particular individual so with every individual; whether a commodity is consumed in the day or in the night; whether at one place or another; in all cases the tendency will be found to be fundamentally the same that the more a man consumes of a thing, the less is the satisfaction which he generally gets from each additional unit of it. This general tendency of diminishing utility has been formulated into a law which the economist

calls the law of diminishing utility.

**The Law of Diminishing Utility.** In order to understand what exactly the economist means by this law, let us take a concrete example. Suppose a boy eats oranges which are exactly alike in size and quality. If he consumes them one after another, he gets diminishing utility from them. The first gives him the greatest enjoyment, say 40 units, the second gives him less than 40, say 30 units, the third gives him less than 30, say 21 units, and so on. If every consumer behave in a similar manner with regard to the consumption of oranges, then we may generalize thus: As identical oranges are consumed, the satisfaction of each succeeding unit decreases.

But the question now arises: Is it true of oranges only? To attempt an answer to this, let us consider the consumption of another commodity, say water. Suppose a man can get water in instalments of one chhatak each just enough for one draught or pull, and consumes it continuously until at last he needs no more of it. After drinking the first chhatak of water that gives him, say, 5 units of satisfaction, he may find that his thirst, instead of being satisfied to some extent, has been sharpened and he feels more anxious to take the second



chhatak. The satisfaction of the second chhatak will, therefore, be more to him than that of the first, and it may be measured by 7 units. The satisfaction from the third chhatak may be more or less than 7 or even equal to 7 units; it all depends upon the intensity of his thirst felt after having taken the second chhatak. Suppose it is 7 units once again. If these pulls are repeated the keenness of his thirst goes on diminishing, so that the utility of additional chhataks of water to him also diminishes. He will not feel as strongly to get the fourth chhatak as he did for the third and therefore the utility of the fourth chhatak will be less than 7 units, say 6 units. As he continues drinking more and more, he feels less and less thirsty and therefore derives diminishing utility from each succeeding chhatak. Hence the tendency of diminishing utility prevails in this case as well; but as is quite evident from this illustration, the utility does not necessarily diminish from the very first unit of the commodity consumed. It is also evident that his thirst is quenched not for ever but for the moment only. He may again feel thirsty after one hour or two hours, or some such period. He could not successively drink more than a certain quantity of water within a given period of time and that is why

he was satisfied. We may now include all these observations in the general statement which we made for oranges. The modified statement stands thus:

As identical units of a commodity are consumed within a given period of time, the satisfaction of each succeeding unit is less than that of the preceding one after a certain point in consumption is reached. Whether the man is at the source of a spring or by the side of a well or in his house, his satisfaction must diminish as the amount of water consumed increases. He may drink it in the morning or in the afternoon or in the evening, but every-time he drinks, the utility of water decreases as its consumption is prolonged. The tendency of diminishing utility manifests itself at all times and at all places. In the general statement, therefore, place and time are not given. The only importance of time is that consumption must continuously take place within a given period of time, or else the utility may not diminish. For example, I may not be satisfied with any number of shirts, if I want them only to be used on special occasions and not for daily use. Every addition made to my stock of shirts may bring me greater amount of satisfaction, if they are meant for use at different periods of the

year. But if I want shirts, all of which are to be successively used in the course of a single day, or if I want them so as to wear one over the other, then I must get diminishing utility from them. The first shirt worn may give me, say 30 units of satisfaction, the second which may be worn over the first, because it is a wintry morning, will give less than 30 units of satisfaction, say 15 units only. If the third and the fourth are put on over and above the first and the second, the utility must rapidly decrease. The third may give 5 units of satisfaction, but the fourth will probably be uncomfortable. Thus an increase in the stock of shirts reduces my desire, my eagerness, my anxiety to acquire more of them. Hence other things being equal, the more we have of a thing, the less we want additional amounts of it for the time being. In the words of Prof. Marshall, 'the additional benefit which a person derives from a given increment of his stock of anything, diminishes with every increase in the stock that he already has'.

Most simply, the law of Diminishing utility may be stated thus: Each additional unit of a commodity consumed within a given time gives, other things being equal, less satisfaction to a person than the previous unit.

**Significance of the phrase 'other things being equal'.** Each additional unit of a commodity gives diminishing utility only when other conditions remain unchanged during the period of consumption. In 'other conditions' we include (1) that all units of the commodity consumed are identical, i.e. equal in quantity and quality; (2) that the consumer and his attitude towards the commodity consumed are not changed so long as the consumption lasts; and (3) that if long periods are involved in consumption, the consumer's income, tastes, fashions and habits remain unaffected. In short, the consumer remains exactly the same individual in all respects and also the units of the commodity consumed are exactly alike during the entire period of consumption, for if it is not so the law may not hold good.

If, for example, the oranges which the boy consumes are not equal in quantity and quality, they may not give him diminishing utility as the consumption is continued. The bigger orange will give him more satisfaction than the smaller one, so that if the former comes after the latter in consumption it may not give less satisfaction; it may, on the other hand, give equal or even more satisfaction than the previous one. Similarly, the

sweeter orange will give more satisfaction and consequently may interfere with the steady fall in utility. Oranges are usually neither equal in size nor similar in quality. Hence it is only under the assumption that the units are perfectly identical that we can expect utility to diminish with each succeeding unit of consumption.

Again, the man who eats a meal ordinarily feels less and less pleasure as he goes on eating more and more of it. But if he takes *bhang* after he has taken some mouthfuls, he becomes a different man under its influence and his attitude towards food is changed; hence he may relish his food more and more.

A change in one's circumstances may also increase the utility of articles he has been using before. A man, living in a small house as he could not afford to pay higher rents of bigger ones, may not be able to take full advantage of four tables due to dearth of space. If his income increases or he inherits a rich legacy and hires more rooms, by proper arrangement of the tables in separate rooms he will derive greater satisfaction. The same tables which gave him diminishing utility before begin to yield increasing utility now.

Hence unless we assume that the consumer,

his taste, income and all other things are unaltered during the period of consumption, we cannot be sure of the utility to diminish with every increase in his stock for consumption. All these limitations, therefore, should not be dropped out of sight while dealing with the law of diminishing utility.

**Exceptions to the Law of Diminishing Utility.** There is yet another assumption which we make in connection with this law. It is that the unit, with which the consumption starts, is big enough to allow of additional satisfaction to diminish. For if under exceptional circumstances the unit is too small to be appreciable, the additional satisfaction may go on increasing until a certain amount of the commodity is consumed and then it may begin to fall. A tola of wheat flour at a time may be of no consequence to a consumer to satisfy his hunger, and therefore as each tola of flour is added every time to his stock, it may give increasing satisfaction upto a certain limit. After this limit every addition made to his total stock may come only to give him less satisfaction than that derived from the preceding one. The same holds good for grapes if they be consumed one by one in succession. Hence it is only after a certain point in consumption is reached that the additional satisfac-

tions begin to diminish. The phenomenon of increasing utility is, in fact, an exception to the general law of diminishing utility.

A similar departure from the law of diminishing utility may also be noticed in the following cases on account of the peculiar character of the commodity consumed.

Take the case of a telephone. Its utility to a consumer increases with the increase of its connections. For, the larger the connections, the greater the number of people to be in communication with, and consequently the more the utility of the telephone service to any one user. But if the connections are too many, the service may become too bulky for a single exchange, and several exchanges may have to be worked. This will involve loss of much time in getting the required number and further mean faintness of the voice heard at the other end; consequently its utility will be reduced. Hence the additional utility will increase upto a certain limit and then decrease. This is another exception to the law of diminishing utility.

A third exception to the law is furnished by curios and rare articles. There are people who are interested in the collection of rare things like

ancient stamps and coins, and also of curios. To them every unit which increases their total stock brings greater pleasure. For example, if ten coins constitute a complete set representing a period in history, the desire to get the remaining coins one by one will grow stronger as more and more of them are secured, and the satisfaction of a keener desire every time will mean greater pleasure to the collector. The possession of a rare specimen of old pottery, say a vase, gives great pleasure to the collector, but the other of its kind that completes the pair, may be the source of a far greater amount of happiness. A horse that makes a pair with another of the same size and colour so as to be yoked together in one carriage, is appreciated more than the first one. But the increase in satisfaction with every fresh unit continues only until as many units have been acquired as make a complete set or group or pair, i.e., until the object of collection is fulfilled. Thereafter the additional satisfaction rapidly decreases with every addition in the stock. Hence in this case also, the additional utility increases upto a certain limit and then decreases.

Though at first the additional utility may increase in all these cases, it is ultimately bound to decrease. These exceptions to the law, therefore,



are only apparent and not real.

**The law of satiable wants.** When the boy consumes oranges or the man drinks water, he consumes only one commodity. But when a meal is eaten, several commodities together are consumed. The want for a meal is as much subject to the law of diminishing utility as that for oranges or for water. One mouthful of food consists not of one commodity but of several, and as more and more mouthfuls are eaten, the additional utility diminishes not of one but of several commodities taken together. Hence what gets gradually satiated in this case is the appetite for several commodities. Food, however, is not the only want in which this law operates. It is equally applicable to the wants for dress and shelter. If a dress is meant to wear and not to sell, one cannot without personal discomfort and gradual decrease in the amount of additional satisfaction, desire more than a certain number of clothes to put on at a time. Similarly, house accommodation is regulated by the requirements of health and hygiene and the condition of an individual's identity being present at one place at a time. Therefore if house is intended to afford shelter and living accommodation and is not for letting on hire or for show, it can-

not but yield diminishing utility, as more and more rooms are added to it.

Thus want for dress is resolvable into wants for several articles of dress, and want for shelter is resolvable into wants for several rooms. The satisfaction of each of these wants involves the satisfaction of wants for several articles; hence the law of satiable wants is a more suitable name for the tendency of diminishing utility in these cases.

### EXERCISES

1. 'The more oranges a boy consumes, the greater is the amount of satisfaction which he derives from them. For if it were not so, why should he consume them at all?' How then does the utility diminish? When you sit in your class for long does not your satisfaction decrease? If it does, why does it? What is it that you consume there? How long can you sit idle in your room? Why not longer?

2. Explain as clearly as you can the law of diminishing utility, giving particular attention to the formulation of the conditions under which it is true. Are there any real or apparent exceptions to this law?

3. 'At any given time, the larger the amount of a commodity a person has, the less, *other things being equal*, will he desire more of it and consequently the

benefit or the utility that he derives from additional units of the commodity, will itself be diminishing with every increase in its quantity'. Point out the significance of the Italicized phrases in the above definition.

4. While stating the meaning of the phrase 'other things being equal', a writer says: "The law thus applies to a particular article at a particular period of time, at a particular place with reference to a particular individual, the intensity of wants remaining the same, and the purchasing power of money remaining unaltered". He gives in italics those conditions which he includes in 'other things.' Do you agree with him? If not, why not? What about the applicability of the law? Do you not think his observations are correct?

5. Under what conditions can the successive consumption of guavas yield the following degrees of additional utility?

Guavas	1st	2nd	3rd	4th	5th	6th	7th	8th	9th.
Degrees of additional utility	10	15	7	7	12	5	2	16	12.

6. 'The utility of Khaddar increased to many persons when it began to be used by the rich and respectable people of India. The utility of hats will grow less to many Indian gentlemen if their use becomes common among the *chamars* and sweepers of this coun-

try.' Is this a limitation to the law of diminishing utility? What, in your opinion, is the bearing of this statement on the law?

7. 'Sometimes we find that the utility of rare things becomes greater to a person when some of those things possessed by others are destroyed.' What has this to do with the law of diminishing utility? Does the statement come even under the exceptions to the law?

8. What are the assumptions that we make in the law of diminishing utility? State exceptions, if any, to the law.

9. 'As our stock of a commodity increases, each addition to it possesses less utility than the previous addition.' That is how the law of diminishing utility is defined. In the light of this definition consider critically whether the following case of album comes under the exceptions or limitations to the law:—

'Similarly the utility of an album for collecting stamps would increase considerably in the eyes of a stamps collector as his album contains more and more of stamps'.

10. The love of display, the lust for power, and the miser's appetite for money are often spoken of as some of those instances where the law of diminishing

utility does not hold good. Give your opinion in this matter and state the reasons for your answer.

11. State and illustrate the law of satiable wants. Can the love of display be not regarded as an exception to this law?

## Chapter V

### MARGINAL AND TOTAL UTILITIES

**The "Margin".** Literally 'margin' means terminus, end, or limit. When we consume successive units of a commodity, we cry out after some time 'thus far and no further', 'we don't want any more of it', 'we are satisfied for the moment'. When this limit is arrived at, we say the margin of consumption is reached.

But when the margin of consumption is reached, it does not necessarily imply that the consumer is fully satisfied, that the consumer will begin to feel pain if he proceeds any further. For, it so happens frequently that he has to stop short of full satisfaction for one reason or the other. An untoward incident sometimes puts an abrupt end to consumption. For example, a fly may spoil the dish of which no more can be had at that time; the food may taste too poor to leave any desire for further consumption; or the consumer listening to a concert may hear a bad news and therefore may have to go away suddenly. Most of the poor people of our country do not get even one

square meal a day. Can we suppose that they reach the point of full satisfaction? Of course, on rare occasions when they have to feast at the cost of others, they do have their fill; they are fully satisfied; they want no more at that time. The margin of *full* satisfaction is said to have been reached then. But even when they are not fully satisfied, they do come to an end of consumption; they reach the margin of consumption, though they are short of full satisfaction. The margin of consumption may be reached earlier at one time and later at another. It may come after, say, 100 mouthfuls in the morning, and after 80 mouthfuls in the evening, inspite of the fact that there is more than enough food to eat each time. If, however, the food happens to be short of requirements, the consumption is bound to terminate as soon as that food is finished. In other words, when there is not enough of a commodity, the available supply of it limits the margin of its consumption. When there is a variety to consume, the margin of consumption may be reached before the consumer is able to get full satisfaction from a single commodity, because he hopes to get more satisfaction just then from some other commodity. After taking two bananas, for example, he may decide

to eat oranges, because the third banana gives him less satisfaction than the first orange and the first orange gives him less satisfaction than the second banana. But even if the third banana gives as much satisfaction as the first orange does, his choice may fall on oranges at least for the sake of variety. If there is a great variety of commodities, he may like to give a little time to the consumption of each commodity before the capacity of his stomach to hold any more is exhausted. Insufficiency of time at his disposal for the consumption of each commodity may not enable him to derive full satisfaction from it. Under such conditions, the margin of consumption must come earlier than the point of full satisfaction in the case of all commodities except the one which comes last. We have only twenty-four hours at our disposal every-day and there are so many things to do in this limited time that very often we have to curtail our activities in one direction for want of time. We would probably prefer to read novels until at last we are tired of them, but novel-reading is not the only work we have to do. We have to eat, to sleep, to wash and to do so many other things; but we all know from our experience that if the novel is unusually interesting, we would



devote as little time to eating and doing other things as we possibly can. We may give only 10 minutes instead of 20 minutes to our meals, and 10 minute's time may not be quite enough for full satisfaction of hunger. We may go hungry rather than leave the novel and break our interest in it. But when we take food, we reach the margin of consumption, though that is not the end of full satisfaction. Similarly, when we are at a railway station and the stoppage of the train in which we travel is short, we have only a few minutes at our disposal and consequently do not wait to eat to our fill in the restaurant, but terminate our consumption abruptly as soon as the time is over. The margin of consumption is reached in that case also.

Hence 'margin' is not necessarily the limit beyond which the consumer is afraid to proceed lest further consumption may cause him pain.

**Marginal Utility.** Every unit that is consumed possesses some utility to the consumer. It may be a positive, zero, or negative quantity. It is positive when a man has to stop consumption for any reason whatsoever, without being fully satisfied; zero when he consumes till his want is fully satisfied; and negative when he goes beyond this point and thus consumes more than what he

should have done, either under the influence of some stimulant like *bhang* or alcoholic drink or under stimulating passion like competition as boarders do on special occasions, or due to ignorance as is usually done by children at the time of taking sweets. To illustrate, let a man consume oranges which give him in succession 40, 30, 21, 13, 6, 0, -5 and -9 degrees of utilities if he consumed eight of them. The utility of oranges continues to be positive till five of them are consumed, becomes zero for the sixth, and beyond that it is reduced to negative quantities, -5 and -9.

When five oranges are consumed, the fifth gives 6 degrees of utility but 6 is *not* the marginal utility of the *fifth* orange. The fifth orange by itself cannot be called marginal orange; it is marginal because it is consumed along with four others. Similarly if eight oranges are consumed in one act of consumption, eighth will be called the marginal orange for the similar reason that seven others have been consumed along with it. Thus apart from being one of the group, a unit has no importance as the marginal unit. (Of course, if only one is consumed, the question of marginal unit does not arise). Consequently 6 will measure the marginal utility, not of the fifth orange, but of the five

oranges taken together. Similarly 0 will be the marginal utility of six oranges and -9 of eight. *Marginal utility of a commodity is the utility derived from that unit of it which is at the end of successive and uninterrupted consumption of that commodity.*

This notion is confirmed if it is noted that any one of a stock of several units can become marginal unit. Suppose we name the oranges A, B, C, D, E, F, G, and H, and out of these only first five are being consumed. Consumption may start with A and continue in the order the names have been given. If it is so, E becomes the marginal orange and acquires 6 units of utility. If consumption starts with E and proceeds in the opposite order, A becomes the marginal orange and comes to acquire 6 units of utility. Any order may be adopted and each of them can become marginal orange and acquire 6 units of utility. It is, therefore, clear that at the margin each of the various arrangements offers uniformly 6 units of utility. Hence the marginal utility of five oranges is measured by 6 units. We can express the same idea in another way also. We have supposed all the eight oranges to be exactly alike; hence they are not distinguishable. Whichever out of the

whole lot comes first in order of consumption is the first, and whichever comes next to it is the second; they don't bear names. Therefore so long as consumption has not actually begun, any one of the eight oranges can be regarded as the first and consequently each may be given the same amount of utility which the first in fact will carry. When the first has been consumed, only seven are left. Any of these seven oranges can be taken for the second, because the second will after all come from among them. Therefore each of the remaining seven may be endowed with as much utility as the actual second will command. Similarly, after the second has been consumed, each of the remaining six may be said to possess the utility of the third. These facts put in a tabular form stand thus:

Total stock of the consumer	Utility of the 1st orange	Utility of the 2nd orange	Utility of the 3rd orange	Utility of the 4th orange	Utility of the 5th orange	Utility of the 6th orange	Marginal utility
1	40	..	..	..	..	..	40
2	40	30	..	..	..	..	30
3	40	30	21	..	..	..	21
4	40	30	21	13	..	..	13
5	40	30	21	13	6	..	6
6	40	30	21	13	6	0	0

Whichever comes at the end of continuous consumption becomes the marginal orange. If the consumption is successive and stops with the fifth orange, as we have supposed, the marginal utility of the oranges at that limit is 6.

From this it follows that the utility got from each successive unit of a commodity consumed may

be called marginal utility, and the law of diminishing utility may for that reason be designated as the law of diminishing marginal utility. Some people prefer the latter name of the law, because it makes abundantly clear that the utility which diminishes according to the law is marginal utility. When it is said that the fourth unit of a commodity yields less satisfaction than the third, it simply means that the marginal utility of 4 units is less than the marginal utility of 3 units.

**Marginal and Additional Utilities.** In our last illustration, 6 is the marginal utility of five oranges. It represents the quantity by which the total amount of satisfaction as derived from the consumption of four oranges is increased when one more orange is consumed. It is the amount of satisfaction which is added to the total stock of satisfaction at the end of the consumption of four oranges. Hence 6 may be called the 'added' or 'additional' utility due to the fifth orange. Similarly, 13 may be called the 'additional' utility of the fourth orange.

Additional utility refers to the utility of one unit, but 'marginal' utility measures the *importance* of the whole stock of the commodity consumed upto that limit. Marginal utility is pro-

portional to the price which the consumer would pay for *each* unit of that stock. When we use cardinal numbers such as one, two, three, four, five etc., with the units of the commodity we use the word 'marginal' with the utility. But when we use ordinal numbers such as first, second, third, fourth, fifth, and so on, we use the word 'additional' with the utility. For instance, we say the additional utility of the fourth orange is 13, and the marginal utility of four oranges is 13. The latter expression is equivalent to saying that the marginal utility of oranges is 13 when the stock consumed consists of four oranges.

**The point of satiety.** Satiety means full satisfaction, and the state is reached when the consumer of a commodity feels that he has had enough of it and desires no more. His desire to consume will continue as long as he goes on deriving some utility, however small, from successive units; and he will probably consume even that unit which gives him zero utility for no other reason except that it causes him no trouble or inconvenience. But this is certain that no person, being his normal self, will continue consumption beyond this point of zero utility, as then the utility got from additional

units becomes negative and the pleasure is turned into pain.

This point of zero utility upto which a person can consume a commodity without suffering any pain is the point of satiety.

The point of satiety is not reached in every act of consumption. As has already been mentioned, consumption has to be abruptly stopped by untoward incidents, by dearth of the commodity, or by shortage of time and money.

Satiety point is reached only when these obstacles are not present in the way of consumption. It is also reached when no money needs be paid for the commodity to be consumed. For instance, a guest who is being entertained at his friend's does not have to pay any money for what he consumes. He, therefore, enjoys a commodity to his fill, or upto the point of satiety. The same is the case with all those who join a feast. If some one gives me the liberty of eating as many *rosbgullas* as I possibly can for no payment whatsoever, why should I stop before I am fully satisfied?

**Total Utility.** The total utility of a commodity is the sum total of all the additional utilities obtained in one act of consumption. If a man consumes four oranges and they afford him suc-



cessively 40, 30, 21 and 13 units of utility, then to him the total utility of four oranges consumed at that time is  $40+30+21+13=104$  units. But if the satisfaction derived from the first few units has been so great that it cannot be expressed in numbers, the total utility cannot be determined definitely.

### Total utility and the point of satiety.

As consumption proceeds, the total utility derived from the commodity goes on increasing; every successive unit adds to it though in smaller and smaller degrees. This growth in total utility continues until the point of satiety is reached. The consumption of the satiety unit adds no utility to the stock of total satisfaction, while if consumption is continued beyond this point, every unit consumed reduces the total utility of the commodity. In our example, if six oranges are consumed, the total utility of oranges amounts to 110 degrees; but if seven oranges are consumed, the total utility amounts to  $110-5$  or 105 degrees, that is to say, it is reduced by 5 degrees on account of the seventh orange consumed. The eighth orange brings it still lower to  $105-9$  or 96 degrees. If consumption is carried still further, the total utility will be reduced all the more. Hence

as consumption proceeds beyond the point of satiety, total utility becomes less and less. Before the point of satiety is reached, the total utility tends to mount up. It is 70, when two oranges are consumed, 91 when three are consumed. Point of satiety, therefore, is the point upto which total utility increases and beyond which it decreases. In other words, total utility is maximum at the point of satiety. But this maximum is rarely reached, because consumption is seldom carried to the point of satiety.

**Total utility and the law of diminishing utility.** A stock is said to change at a uniform rate, if an equal amount is successively added to or taken away from it. The stock of oranges, for example, will be said to decrease uniformly if the oranges are consumed one by one. As more and more of them are consumed, the amount of additional utility derived from each of them grows less and less; but the total utility continues to increase upto the point of satiety. If additional utility be regarded as the rate at which the total utility increases, we may say that as the stock of a commodity changes at a uniform rate, the total utility increases at a diminishing rate upto the point of satiety. Beyond the satiety-point, the stock may

continue to change at a uniform rate, but the additional utility which becomes negative now increases instead of decreasing and the total utility decreases instead of increasing. Consequently, if the consumption is at all pushed beyond the point of satiety, the total utility decreases at an increasing rate.

**Total utility and rival commodities.** Most of the commodities which man consumes today are capable of being replaced to some extent by another. Rice can do instead of wheat, oil instead of ghee, gur instead of sugar and so forth. The physical properties of these commodities are such that one gratifies the senses in much the same way as the other does. They are substitutes to each other. The total utility of a commodity to a person is at once decreased when he comes to possess its substitute. For example, if on a *bartal* day a man has just enough rice for the day and no more, he will try to preserve and consume it with all possible care. The total utility of that rice to him will be very high at least for that day. But if he happens to have a little quantity of wheat as well, his regard for the rice will be lowered; that rice will no more possess as much utility to him as it did in the absence of wheat. This is true for all substi-

tutes. The more perfect the substitute, the greater is the fall of total utility.

### **Total utility and allied commodities.**

Total utility is considerably increased to the consumer, if a commodity is associated with its complementary commodity. Rice and dal, for instance, are allied commodities. If they go together, they surely increase the total utility to the consumer. Rice without dal will not yield as much utility as with dal. If dal is not in right proportion with the given quantity of rice, the total utility of that portion of rice which is in excess is diminished for want of dal.

### **EXERCISES**

1. 'A man can consume six apples at the most. He gets diminishing utility as he eats them. From the sixth or the last he derives zero utility. Hence sixth apple is his marginal apple and the utility got from this apple is called the marginal utility'.

Point out mistakes, if any, in the above statement and show why you regard them as mistakes.

2. 'The marginal utility of a commodity is measured by the lowest, or least, or last use of it'. What determines that this or that particular use is the last?

If you had four laddus all alike, could you tell which is the marginal one?

3. 'Satiety is the point at which an additional supply gives *no* additional satisfaction, while the margin is the point at which the additional satisfaction is *less* than the additional cost'. What have you to say to this distinction between 'satiety' and 'margin'? Explain with reasons if you have any difference of opinion.

4. How is it that

(a) 'The value-in-use of loaves of bread varies with hunger, but the price of all loaves of bread in the same market is the same'.

(b) 'Nothing is more useful than water; but it will purchase scarce anything; scarce anything can be had in exchange for it. A diamond, on the contrary, has scarce any value in use, but a very great quantity of goods may frequently be had in exchange for it'.

5. Comment upon the following:

(a) 'Marginal utility is the utility of the last unit of a given commodity. Last here means *last in satisfaction* and not last in time'.

- (b) 'The marginal article is the article which the buyer only just decides to buy, at a given price'.

6. An examinee wrote the following:—

'Suppose I go to a baker's shop to appease my hunger. For the first chapati which I purchase from him, I pay two annas because it gives me the greatest amount of satisfaction. For the second which gives me less satisfaction than the first I pay 7 pice. For the third, I pay 6 pice; for the fourth, 5 pice, and so forth. I pay one pice less for each additional chapati on account of diminishing utility to me. I am fully satisfied after eating six chapatis. The sixth chapati puts an end to my consumption. It is the last, the least important and also on the margin of consumption. Therefore it is the marginal chapati. Nobody can consume beyond the marginal unit'.

If you were an examiner, how will you treat this answer? If you were a teacher, what corrections will you make?

7. What is meant by marginal utility and total utility? Trace the relation between the two. Is there any difference between the marginal utility of a commodity and the utility of the marginal unit?

8. Explain

- (a) how it is possible for consumption to reach its margin before the point of satiety.
  - (b) how it is possible for total utility to reach its maximum at the point of satiety.
9. 'If a person's stock of a commodity increases at a uniform rate the benefit derived from it increases at a diminishing rate'. Explain with the aid of a numerical illustration.
10. Examine the following critically:—
- (a) 'Total utility is the sum total of the decreasing utilities of all the increments from the first to the last'.
  - (b) 'All wants are satiable, and there must come a certain point when the satiety point is reached'.
  - (c) 'Bread has less utility without butter than with it, for it can give but little pleasure in being eaten without it; and butter also has little utility without bread on which to spread it'.
  - (d) 'Suppose there were *nine* apples in all, the utility of successive apples being 6, 5, 4, 3, 2, 1, 0, -1, -2 units. Now, if the boy refuses to eat any more after he had taken six apples the 6th apple is the 'marginal apple'.

and the satisfaction derived from it measures the 'marginal utility' to him.

'The marginal utility of the sixth apple is 1'.



## Chapter VI

### THE LAW OF EQUI-MARGINAL UTILITY

**Variety.** Why do we mix our rice with dal? Can't we take rice without dal or dal without rice? We can, but we will not get the best results in the way of our satisfaction. We cannot mix too much dal with a given quantity of rice, or too much rice with a given quantity of dal, because it will not give the best results; it will not quite please the palate. Along with variety, we need to have the right proportion also before we may get the greatest pleasure. 'Variety is the spice of life', but it must come in proper proportion. For the vegetable to be most tasteful, we add only as much ghee, salt, pepper and water as is required to form the most desirable proportion with it. We do the same with dress. We want variety—specially that combination of clothes which match one another. We also want only that proportion of clothes, which makes the best combination. We may have one suit for the college dress and another for the sports, but each suit must contain a limited quantity of each variety. When we build a house, we look for

variety and that variety in particular which is most comfortable and most pleasing to the eye, but there too the most appropriate proportion is sought for.

**The hedonic principle.** Whether a man eats to stay the stomach, or clothes himself to protect his body from heat and cold, or builds to afford him shelter, there is the one desire which underlies almost all his actions—that of getting the most enjoyment, the greatest satisfaction. Every man in this world seeks to obtain a maximum of pleasure for a minimum experience of pain, inconvenience, or expenditure. If he exchanges, he seeks the greatest benefit for the least sacrifice. If he takes to a job, he seeks the greatest reward for the least inconvenience. This general *principle of the maximisation of happiness* is generally called the *hedonic principle* after the Greeks. And 'Economics' as Jevons (H. S.) puts it 'may be briefly defined as the science which investigates the general methods of man's endeavours to conform his actions to the hedonic principle.'

When seeking happiness for himself, a man endeavours in numerous and various ways to obtain a maximum of enjoyment at the cost of a minimum of pain or sacrifice. Newspapers, when once they are read, become old and useless; they

then serve for lighting fires. When an animal is dead, its bones are ground up for manure and its skin is used for making shoes. When fashion changes it destroys the utility of much of the clothing of the richer classes. The cast off clothes are either sold to theatrical companies or given over to the servants for their use. The poorer classes get their old clothes mended and restored to almost their former condition with the object of using them over and over again. If they are too worn to admit of reviving, they are taken to pieces, cut up, and made into entirely different dresses. The father's old shirt sometimes makes a good frock for his daughter. In big cities old clothes of all sorts are the matter of a most extensive trade. Chipitola of Agra where such trade is centered is a well known place. It provides a good and cheap market for clothes to the poor. To destroy old clothes would certainly be a crime against the poorer classes who would be deprived of all such wealth. A good deal of wealth would be saved if old clothes, rags and other rubbish were not destroyed but put to sale or charitable purposes.

We use brass and copper vessels instead of earthen wares, because they can be used over and

over again, last for long periods and are cheaper in the long run. Even when they become practically useless, they can be sold, or melted to be refashioned into new shapes. Gold and silver are reutilised for various purposes. They are melted and remelted several times without much loss. Hence their high value and great use in currency. We also keep rice over long periods. Why? Because we have learnt by experience that it acquires more utility after being allowed to stand for two or three years than it has when it is quite fresh from the fields. We prefer to consume old rice simply for the reason that it gives greater pleasure and we would surely like to store it till it is capable of giving the greatest satisfaction.

**How we tend to maximise our satisfaction from the use of time.** Every one of us, young or old, rich or poor, has only twenty-four hours of the day at his disposal. He is quite at liberty to use them just as he likes. He may spend them all in sleeping or in working. But probably he would choose to spend them in both. He cannot afford to be sleeping all the twenty-four hours, because he has some vital needs which must be satisfied and for which he must work. If he works, he causes pain to himself. If he rests, he

derives pleasure. His aim, therefore, will be to strike such a balance between pain and pleasure as to be of greatest advantage to him. His motive in all his actions will be to minimise pain and maximise pleasure. With this object in view he will divide his twenty-four hours between activity and repose.

There are various ways of getting pleasure. We eat a meal, we get pleasure. We take a bath, we feel pleasure. We play for the sake of pleasure. We read novels for the sake of pleasure. But we cannot continue to eat or to bathe or to play or to read for a very long period of time, as we get fed up with one kind of activity after some time. We want a change. After a few hours' hard labour we want repose. After reading English text continuously for two hours a student needs an hour's play or a story book to go through. Hence work and rest have to be so interwoven as one may follow the other and the whole arrangement be in conformity with the hedonic principle. If there is any possibility of increasing the total satisfaction by reducing the time given to one mode of activity and diverting it to another, it is done.

But it is not the present enjoyment alone with which we are concerned. We have to see to our

future needs also and provide for them. We have to maximise our happiness over all subsequent time. We have to decide how far we are to sacrifice our present satisfactions to the future or the future to the present. This is really difficult to do. For all our knowledge and shrewdness we cannot see far into the future; and then the future is vague and uncertain. It is for these reasons that we are always making mistakes in judgment and in securing the greatest amount of pleasure. Yet, human nature as it is, we strive to get to the ideal through failures and disappointments; and there is no reason why we should not. Many noble ends have been achieved through the method of trial and error.

The student, who reads with the hope of being better off in the distant future, applies the same method in dividing his time between work, play and rest. If he over-values the future, he probably gives too much time to studies and thus destroys his health. If he under-values the future, he gives too much time to play and thus cannot make his future quite bright. In each case, he is given to great extremes which are bad. The most clever is that student who succeeds in dividing his time in such a way as neither to injure his health nor

mar his future. A student has not to earn the money he spends. He, therefore, does not very much care to lay out his monthly allowance in the most judicious manner. But to those who earn what they spend the problem of the division of income is no less important than that of the division of their time and energy to their best advantage.

**The division of income.** Most of the people have to labour for their incomes which are largely in money in the present state of society. With great pains they earn these incomes and therefore with great wisdom and judgment they try to spend them. As they get only a limited amount of money per week or per month, they endeavour to meet almost all their needs as economically as they possibly can; they *choose* among different articles of their consumption, giving up less important ones in order to have the more important. They distribute their money between different commodities in such a way as to get the greatest benefit. The following hypothetical illustration serves to show how it is possible for a consumer to obtain a maximum of satisfaction with his limited amount of money.

Suppose a person has ten annas to spend upon

three commodities, oranges, sweets and lemonade. Let one anna be the price of one orange or one chhatak of sweets or one bottle of lemonade. The utilities which he derives from successive units of each of these commodities are set out in the table below.

Commodity	Degrees of utility from successive units
Orange	40 30 21 13 6.
Sweets	36 34 31 27 22 16 9 1.
Lemonade	26 21 13 3.

Each number in the table stands for the degree of utility which the expenditure of one anna brings to the consumer. Thus 40 stands for the satisfaction obtained from the first of those annas which are spent upon the oranges; 36 stands for the satisfaction obtained from the first of those annas which are spent upon the sweets; and similarly 26 stands for the satisfaction obtained from the first of those annas which are spent upon lemonade. In the same way, 30 represents the utility got from the second of those annas which are spent on oranges; 34 represents the utility got from the second of those annas which are spent on sweets; and so forth. As one anna brings one orange, we may also say that 40 degrees of utility are obtained from



the first orange and 30 from the second. One anna brings one chhatak of sweets, therefore 36 degrees of utility are got from the first chhatak of sweets and 34 from the second. One anna brings one bottle of lemonade; consequently 26 degrees of utility are obtained from the first bottle of lemonade and 21 from the second. It is to be noted that every unit of each commodity in this illustration costs one anna or has the same money value. Hence in laying out income on several articles of consumption, it is essential that each unit of the various commodities should have the *same* money value. This becomes all the more necessary when such articles of consumption are selected as cannot be directly compared with one another. For instance, it is hard to tell whether one or two oranges equal one chhatak of sweets without measuring them with the common rod of money. Unless all units of all the commodities are equal and comparable, the distribution of expenditure on the basis of utilities is absurd. How can we decide which one to buy, wheat or cloth, merely on the basis of 50 and 30, numbers standing for one seer of wheat and one yard of cloth respectively, if we do not know whether one seer of wheat and one yard of cloth are comparable or not. If, how-

ever, we know that each of them costs two annas, then they are comparable; and when they are comparable, we can easily say that one seer of wheat ought to be preferred to one yard of cloth, because the former yields more satisfaction than the latter.

In our table, all the units of the three commodities are comparable. If this table of utility be placed before the consumer and he be asked to choose in order of preference the numbers of utility which he would like to have for every anna of his money, he will decidedly choose 40 as the first number. In other words, he will decide to buy, first of all, an orange with his anna. The next number of utility selected will evidently be 36. Hence after having purchased an orange, he will decide to buy one chhatak of sweets. Then the choice will fall on the numbers 34 and 31, which means that two more annas will be spent on sweets. Thus three annas one after another will be laid out on the purchase of three chhataks of sweets. After 31 comes the number 30; so he will go in for another orange now. But 30 is followed by 27, the next lower number. Hence he will fall back to sweets after the orange. The lemonade has remained untouched so far. Since 26 is the next lower number to be selected after 27, the first bot-

tle of lemonade will be bought only when four chhataks of sweets have been purchased. By this time he will have spent 7 annas, so that he is left only with three more. Out of these three annas, one will go to sweets, as no unit of any other commodity at this stage is capable of giving more satisfaction than 22 degrees of utility. Now two are left. The next lower number is 21. It stands at two places—for the utility of the third orange and also for the utility of the second bottle of lemonade. The consumer now may find it difficult to decide whether to buy orange or to buy lemonade. So far as the decision on the comparative satisfactions is based, both the orange and the lemonade stand on an equal footing, and therefore evidently it is a matter of indifference for the consumer to buy one or the other. Had he not purchased any lemonade upto this time he might have preferred it, if not for utility's sake, at least for the sake of variety. But he has already got one bottle of lemonade, so the question of variety does not arise at all. The only way out of the difficulty is to buy both an orange and a lemonade, when the consumer having two annas left, can easily afford to do so. This is, of course, all right and possibly the only best course to adopt; but what would have

happened, if the consumer had under the circumstances only one anna left with him. Then he would have felt bound to choose the orange or the lemonade. He could not possibly decide to spend half an anna on each of them, unless he could get orange in parts and lemonade in smaller quantities.

Thus when all his ten annas are spent up, he finds that he has purchased oranges until the utility is brought down to 21, sweets until the utility is as low as 22, and lemonade until the utility stands at 21. In other words, he has moved down each line of utility upto the point at which the marginal utility is exactly 21 or near about it. This has brought him *three* oranges with marginal utilities 40, 30 and 21 respectively, *five chhataks* of sweets with marginal utilities 36, 34, 31, 27 and 22 respectively and *two bottles* of lemonade with marginal utilities 26 and 21 respectively. The sum total of pleasure which he experiences in thus spending his ten annas amounts to  $(40 + 30 + 21) + (36 + 34 + 31 + 27 + 22) + (26 + 21)$ , or 288 degrees of utility. This is the maximum satisfaction which he can possibly get for his amount of ten annas. To show how, suppose he buys oranges, sweets and lemonade not in the proportion of 3, 5, and 2 as he has already done,

but in a different proportion. In the first instance, let that proportion be 4, 4, 2. If he buys 4 annas' worth of oranges, he derives 40, 30, 21 and 13 degrees of successive utility; if he spends 4 annas on sweets, he gets 36, 34, 31, 27 degrees of successive utility; and if he spends 2 annas on lemonade, he gets 26 and 21 degrees of utility as before. The sum total of these degrees of utility comes to  $(40+30+21+13) + (36+34+31+27) + (26+21)$  or 279. This number of total utility is smaller than 288 which he got with the proportion 3, 5, 2. The marginal utility of four oranges is 13, of 4 chhataks of sweets is 27, and of two bottles of lemonade is 21. Hence this time the marginal utilities turn out to be different and not equal as was the case with the proportion 3, 5, 2. Let us now assume a different proportion say 5, 4, 1 and find out the sum total of utility. According to this ratio, he buys 5 oranges, 4 chhataks of sweet and 1 bottle of lemonade. From five oranges he derives 40, 30, 21, 13 and 6 degrees of utility successively; from four chhataks of sweets he gets 36, 34, 31 and 27 degrees of utility and from one bottle of lemonade he gets 26 degrees of utility. Thus in all he gets  $(40 + 30 + 21 + 13 + 6) + (36 + 34 + 31 + 27)$

+ 26, or 264 degrees of utility. This number of total utility is again lower than 288. The marginal utilities of four oranges, four chhataks of sweets and one bottle of lemonade are 6, 27 and 26 respectively. They are widely different. Hence we draw two conclusions. In the first place, the total utility turns out to be lower with any other proportion than with the ratio 3, 5, 2. In the second place, the marginal utility at the end of each purchase is not the same. By a similar process it can be shown that we shall arrive at the same conclusions with other ratios as well.

Hence we conclude that 288 is the greatest amount of total utility which can be bought for ten annas in accordance with the given table of utility, and that the marginal utility also at the end of each purchase is very nearly the same. Since the marginal utilities turned out to be different with any other ratio which we assumed, and at the same time the total utility was found to be lower, it follows that the equi-marginal utilities and the maximum total utility go together and that each is essential for the other. If the total utility is to be made maximum, the available amount of money has to be so divided between the different articles of consumption as to make the marginal utility along

each line of expenditure the same. If the distribution of expenditure among the several articles of consumption has been so contrived that the marginal utility at the end of each purchase is practically the same, then the total utility cannot but be a maximum.

That every individual tends to distribute his expenditure in much the same way as we have supposed our consumer to do becomes quite evident from the fact that every human being in this world is actuated in all his actions by the one motive of maximising his pleasure at the cost of as little pain or sacrifice as possible. This human tendency has given birth to a very important law in consumption called the law of equi-marginal utility which derives its name from the fact that marginal utilities tend to be equal when the income is spent in order to get the maximum benefit. The law of equi-marginal utility may be stated thus: For the total utility to be a maximum, a given income must be so divided between different articles of consumption as to yield equal marginal satisfaction along each line of expenditure.

This law simply affirms that if the consumer, whether an individual or a family, manages accidentally or judiciously to spend his income accord-

ing to the principle as it lays down for the guidance of man in his actual expenditure, he must derive the greatest possible benefit. But whether a man is able to act accordingly or not, the fact remains that he earnestly wishes to get the most out of a given income, and that if he cares to spend wisely and judiciously, he is likely to approximate most closely to this law.

But the present wants are not the only wants which concern a man; he has to look to his future needs also. Just as present wants compete with one another, so do future wants compete with the present ones. This necessitates the distribution of his expenditure both among various articles of consumption and over different periods of time. If a man receives Rs. 30|- per month, his business is to see that every pie which he spends out of this income, whether to fulfil his present needs or his future, is laid out in such a way that he gets the maximum total satisfaction out of his income. In other words, if he is thoughtful and careful, he will aim at distributing his expenditure in such proportions as to get as much satisfaction from the last pie spent on one thing as from the last pie spent on another, and also from the last pie spent at one time as from the last pie spent at another. He will buy



such quantities of different things for his present needs as will have their respective marginal utilities to bear the same proportion as the prices of those things will bear. As for his future purchases, he must save money, but the present value of the marginal utility of his future purchase must equal the marginal utility of his present purchases. The problem of expenditure before the consumer will be somewhat as follows: How much to spend out of Rs. 30/- on needs in the first week, on needs in the second week, on needs in the third week, and on needs in the fourth week of the month, and how much on every need in each week, so that the total satisfaction may be as high as possible? Evidently the ideal distribution of expenditure will be the one which ensures equal marginal satisfaction along each line of expenditure during the four weeks.

Hence whichever of the three, time, energy or money is the subject of distribution, we all tend to maximise our pleasure; and in order to maximise our pleasure, we have to economise, as our means of time, energy and money are only limited and our wants to be gratified are unlimited. But we are never able to reach our goal,—our ideal of satisfying all our wants and obtaining a maximum of

happiness from them, because as we endeavour to approach the goal, it seems to recede farther away.

**The law of indifference or substitution.**

If two things are indistinguishable, a purchaser finds it a matter of indifference which he purchases. For instance, when the utility of the third orange in our last example was 21 and that of the second bottle of lemonade was also 21, it was a matter of indifference to the purchaser which of the two he purchased. Hence the law of equi-marginal utility is also sometimes called the law of indifference. This principle of indifference comes into full force when the marginal utility along each line of purchase stands at the same level after the distribution of expenditure. The important result which follows from the principle of indifference is that if goods are similar and indistinguishable, they must be bought or sold at the same price in the same market at the same time. Nobody will pay a high price for anything when something else at a lower price will serve his purpose equally well. For a complete discussion of this, see perfect markets under exchange. Again, gain in utility by exchange is the conclusion which follows from the law as applied to two persons exchanging their goods (see exchange).

Similarly when we talk of a uniform rate of wages in any trade, we assume that one man's labour can serve in place of another man's. In other words, we assume that like can serve in place of like. The conception of uniformity in rates of wages is based upon the principle of indifference operating among the labourers who receive those wages. A fuller discussion of this will be found under distribution.

If commodities admit of similarity, they admit of substitution also. In our last illustration, the third orange is as good as the second bottle of lemonade, because each gives the same amount of satisfaction. Hence one can be substituted for the other. The law of indifference, therefore, is only another name for what we may call the law of substitution. Every person in fact seeks to maximise his gain by substituting the more profitable for the less profitable expenditure whenever he gets an opportunity. The consumer curtails his expenditure on wheat or altogether gives up the consumption of it, if he sees that his money thus saved will better be spent on rice. The producer turns out a few labourers and employs a new machine in their place, if he finds an advantage in doing so. A clerk prefers to walk on foot to his office and

thereby save a few annas which he would otherwise spend on a conveyance, because he thinks that those annas can better be spent on sweets for his children. A labourer prefers to go without a meal each day, because he has to save for his warm clothes for the winter, which he would need more urgently than a few days' food. A producer cuts short his demand for land to employ more labourers, if he is convinced that he will gain more than lose by this change. All these are the various illustrations of substitution and the reader himself can think out many more of the kind.

Thus the law of substitution, which goes under the three names, is of fundamental importance in economics. It applies to all the four departments of the science: Consumption, Production, Exchange and Distribution. We shall, however, be calling it only by one name in one department. In Consumption, we shall call it by the name of 'the law of equi-marginal utility'; in Production by the name of 'the law of substitution' or preferably 'the law of equi-marginal productivity'; in Exchange by the name of 'the law of substitution'; and in Distribution by the name of 'the law of indifference.'

**Actual distribution of expenditure and the law.** No consumer has a table of his utilities drawn up, before he goes to a market, to guide him in making purchases. He simply learns by experience and experiments how to divide his income in order that he may obtain the greatest pleasure. He is often in doubt, for example, whether to buy a second seer of sugar or a dozen of oranges; he experiments by buying first one and then the other; he may err but it is through errors that he learns. If he decides to go in for a second seer of sugar in preference to a dozen of oranges, that clearly indicates that he hopes to get more satisfaction from the second seer of sugar than from a dozen of oranges. If he hesitates in giving any definite decision, that shows that the utility which he expects from each of the two is almost equal. The longer he hesitates, the more nearly equal are the utilities. If he cannot decide which of the two to buy, then the utilities are exactly equal and he is probably on the margin of his purchases.

In hypothetical cases we are free to make by convenient illustrations the marginal utility exactly the same or very much the same along each line of expenditure; but in actual cases we deal with realities and therefore the marginal utility is only

seldom equal. The difficulties which arise in the way of making marginal utilities equal are many and may be summed up as follows:

We have to deal with two kinds of commodities namely *divisible* commodities and *indivisible* commodities. By divisible commodities we mean those commodities which can be divided into portions of any desired size without occasioning the destruction of their utilities. For example, wheat, sugar, water; none of these loses its identity if it is broken up even into the minutest divisions. By indivisible commodities we mean those commodities whose utility is impaired if they are divided. For instance, horse, coat, chair; they cannot be cut into smaller parts without their identity being destroyed. The great bulk of the commodities around us consists of indivisible commodities. An apple is a commodity which is not quite divisible. If cut up into several parts, the parts retain the utility of the whole; but if the parts are put together, they do not exactly make the former apple. A raw egg is indivisible, but a cooked one is divisible. Now, if the commodities are divisible, they can be purchased in any desired quantity and consequently it is possible to make their marginal utilities almost exactly equal.

But if the commodities are indivisible, it is much more difficult to make their marginal utilities equal. We must buy either full one horse or no horse. We cannot buy a fraction of it. But even in the case of indivisible commodities, hire and purchase system enables us to make the marginal utilities practically equal. The whole commodity is bought at one time according to this system, and the payment is made by instalments, so that it is equivalent to buying a portion of the commodity. Sewing machines and type-writers are among the commonest examples. If the commodity is not had on instalment system, it can be bought for money borrowed for the purpose, and then the loan can be repaid by instalments.

Changes in prices also render it far more difficult to make marginal utilities exactly equal. For if the price of one commodity goes up while other prices remain the same, one anna purchases a smaller quantity of it than what it did and consequently it yields less satisfaction than before. Hence the utility of the marginal expenditure on this commodity is lowered. To bring back the marginal utility to its former higher number, more than an anna's worth of outlay is necessary. If more is spent on this commodity, other things remaining

the same, less is left for other commodities. This upsets the whole proportion of commodities decided upon before the change in price occurred. Hence a new combination of commodities has to be sought whenever a price changes. Not this alone, new commodities are appearing in the market every now and then. They attract our attention and we are tempted to experiment upon them. They may serve as good substitutes for the old ones, or they may be liked for the sake of variety. Disturbances such as these do not let the budget balance as we would like it.

Again, 'time is money'. We cannot neglect it. In fact, it is one of the most valuable possessions of man. Hence all wise men value time as highly as they do anything else; some of them would value it even more. Right choice of a commodity may take up more time than necessary. We may lose more utility with the loss of that time than we gain by our correct decision. Naturally, therefore, the purchasers are not able to make the best choice. For this reason some rupees are better spent than others.

Above all, our future wants make the problem all the more complicated. We have to provide for them, though we can read our future only vaguely.



**Diminishing utility of money.** Money stands alone of all the commodities, which can be used neither like articles of food, clothes and shelter from which man derives immediate satisfaction, nor like tools and instruments that help in the production of such articles. It is used as only a means of securing every one of such commodities, and yet like any other commodity it is subject to diminishing utility.

If money were used to buy only one commodity, say oranges which is consumed, the utility of successive units of money would be the utility derived from the successive amounts of oranges bought. For example, as we have pointed out, the utility of each successive anna spent upon oranges stands thus: 40, 30, 21, 13, 6. Evidently, these numbers show diminishing utility. Hence we conclude that the law of diminishing utility is applicable to money also.

If money is used in buying two or more commodities such as oranges, sweets, lemonade and others, its utility will again diminish, though this time not so rapidly as before, because now the problem is one of distribution of money among several articles of consumption which brings the law of equi-marginal utility into operation. As-

suming the same degrees of utility as on the foregone pages, we proceed to show how the utility of money is stopped from falling very rapidly, when the question of purchase of more than one commodity comes in. The consumer first spends an anna to buy one orange which gives him 40 degrees of utility. His second anna is not laid out on the second orange which gives 30 degrees of utility but on the first chhatak of sweets which gives 36 degrees of utility. Similarly, his third anna purchases the second chhatak of sweets and no other unit, because it gives him more satisfaction. Evidently, therefore, when he purchases oranges and no other commodity the utility of each successive anna runs thus: 40, 30, 21, 13, 6; but when he purchases oranges, sweets and lemonade, the utility of each successive anna runs thus: 40, 36, 34, 31, 30. How gradually the utility declines in the latter case. The fall may be slower still, if more commodities be included in the list of purchases.

The diminishing utility of money leads us to conclude that the marginal utility of money to a rich man who has more money must be lower than the marginal utility of money to a poor man who has less money. This is, however, true only when we assume that the tastes and sensibilities of

the two men are identically equal and that both of them spend their money on the same commodities. In other words, this would be true if the two men were exactly similar except for the money which they have, for unless it is so, how can we compare the utility derived by one individual with the utility derived by another individual? There is no instrument which may be used to record the utilities of two individuals, just as a thermometer is used to measure the temperature of two bodies. The scientists may one day invent an instrument which may measure human energy. If they succeed in doing that, many complicated social problems, particularly those of distribution of the joint product in economics will be very easily solved. So long as we do not have any common measure of utility, we can, in no way, compare the utilities of two individuals. It is true that we are not quite definite in our statements when we express utility in numbers, but we can surely say that a rich man does not feel the loss of a rupee as much as a poor man does, and on this basis we may assert that the marginal utility of money to a rich man is less than to a poor man.

Another important conclusion which we draw from the diminishing utility of money is that the

same amount of money spent on two commodities does not indicate that the satisfactions obtained from them are equal. The consumer spent one anna on the first orange and one anna on the first chhatak of sweets, but the utilities which he got were 40 and 36 respectively. Hence to say that the utility of a commodity is measured by the amount of money which a consumer is willing to pay rather than go without it is only approximately true. It is only approximately true, because money is usually used to purchase several commodities and the larger is the number of the commodities purchased with the limited income of an individual, the smaller is the amount of it which is spared for a single commodity, and also the smaller is the difference made in the diminishing utility of money.

When money as we understand it today, was not in existence but commodities were exchanged for commodities, each commodity acted as money or the medium of exchange. Food was sometimes exchanged for clothing; therefore food and clothing both were money to the two parties to exchange. Today we have gold, silver nickel or paper money. Whenever by money is meant the money commodity and not the purchasing power, its marginal utility is likely to become zero, if it can be had

free. But when by money we mean the purchasing power and nothing else, the marginal utility is never equal to zero. Even that of food or clothing is not equal to zero, when they act as money.

The case of a miser is a peculiar one. He is an extraordinary human-being. He has a mania for hoarding money. He has a morbid fondness for glittering and jingling coins. He wants gold and silver not for any use of them, but to please his sight only, to give him an eternal joy probably. His appetite for money is insatiable. He is not completely satisfied with any amount of money whatsoever. The point of satiety is never reached. But even in his case, his lust for money gets weaker as the pile of the precious metals mounts up; and after he has accumulated a huge stock, every extra addition to it brings less pleasure or gives him diminishing utility.

**Money and Satiety.** When a man has to pay for what he consumes, the point of satiety is not reached. As money can be put to many alternative uses, he begins to think of another commodity before he comes to the zero point in consumption. For example, suppose he buys oranges for consumption; he will not buy so many of them that the marginal utility is brought down to zero.

This was possible if no other commodity except oranges could be had. But there are numerous commodities which he can choose to buy. Why then will he continue to buy oranges upto the point of satiety when he knows that he can find some better use for his money? He may possibly prefer to buy sweets besides oranges. If he does so, he will like to have some sweets before he buys all the oranges he can possibly enjoy. And if he has enough money, he would probably like to go in for a third commodity, say lemonade, rather than eat oranges and sweets to his fill, for in so doing he makes the most out of his money. If he has too much money to spend, his consumption of any one of the three commodities would not be carried upto the point of satiety, for he can think of enjoying so many other commodities. He may spend on clothes, on pictures, on travel, on education, on charity, on furniture, and on various other things, enjoyment, and occupations. There is no limit to wants, and no amount of money can ever satisfy them completely. Hence the point of satiety can never be reached even in the case of the richest.

## EXERCISES

1. How does variety affect the distribution of our expenditure? Does it prevent or simply retard the rate of diminishing utility?

2. 'In conformity always with the hedonic principle, man struggles to satisfy his wants with natural objects, or with things rendered, if necessary, more suitable for the purpose by his labour'.

What is meant by the hedonic principle? Estimate its importance, if any, in economics. Do you ever act in conformity with this principle? Give some examples.

3. What is your daily routine of work? How many hours do you allot for each kind of your activity, and why? Is your college time-table drawn up according to the hedonic principle?

4. Can you deduce from the law of satiable wants any law for the guidance of people's expenditure? Illustrate. Show how diminishing utility sets a limit to our expenditure on a commodity.

5. What practical advice would you give to your younger brother reading in some school away from you, in the matter of regulation of his expenditure? A college student once wrote to his father.

'The economists have found out a very important law whereby they can determine how much to spend

on food, or clothing, or books, or other requirements. I am trying to learn that law and regulate my expenditure accordingly.'

What would you have written, had you been in his place?

6. Suppose you had a brother and a sister both younger to yourself. How would you distribute 10 laddus among them so as to make their satisfaction a maximum? Give reasons for your answer.

7. State and explain the law of equi-marginal utility. Show what significance it has in the science of economics.

8. A man has Rs. 5 to spend on three commodities, sugar, biscuits and tea. Every unit of each of these things costs 4 annas. How will he divide the sum between them, if the additional utilities of the different units are as follows:

*Utility of successive units*

Sugar	60, 56, 51, 45, 38, 30, 21, 11, 0.
Biscuits	90, 75, 60, 52, 45, 39, 35, 32, 30, 28, 20, 10, 0.
Tea	100, 90, 75, 55, 30, 5, 0.

9. 'A thoughtful and careful person aims at buying such amounts of different commodities that their prices measure their marginal utilities to him'. Explain.



A man purchases 2 seers of wheat and one seer of sugar, the rates of the two things being 8 seers and 4 seers a rupee respectively. In what proportion do you expect the marginal utilities to be at the end of his purchase?

Can you deduce from this any relation between the amounts of the two commodities bought and their prices?

10. While illustrating the law of equi-marginal utility, a student wrote the following:

Ata 50, 46, 42, 38, 34, 30. .

Dal 60, 55, 50, 45, 40, 35.

Ghi 80, 70, 60, 50, 40, 30.

'These are the utilities which the purchaser obtains. If he decides to purchase one seer of ata, its marginal utility being 50, he must purchase three seers of dal and 4 chhataks of ghi, because then the marginal utilities of dal and ghi also will be equal to 50'.

Do you think this answer needs correction? If so, what and why?

11. If you were required to draw up a table of additional utilities which you would get from cloth, milk and eggs, what unit would you choose for each commodity and why?

12. Prove that the total satisfaction reaches its maximum, when the income is so divided that the mar-

ginal utility along each line of expenditure is the same.

13. 'Money can be put to innumerable uses; therefore its marginal utility never becomes zero'.

Water can also be put to several uses. Consider whether its marginal utility will become zero. State your reasons everywhere.

14(a) 'It is, therefore, clear that when one is spending his own income he is likely to stop before he comes to the point of satiety in the consumption of any one commodity'. Explain this with suitable illustrations.

(b) Under what conditions is it possible for the consumer to reach the point of satiety? If it were possible by magic to place as much money at your disposal as you would need any time, would you not reach the point of satiety? Why?

15. 'Originally satisfaction means 'getting enough'. Hence when a man is satisfied, he wants no more'. Does this not imply that the point of satiety is reached? Do you not eat your food in the mess until you are satisfied?

16. Explain the bearing of the following on the law of equi-marginal utility:—

(a) 'There is no bridge to connect the utility enjoyed by one person with the utility enjoyed by another'.

- (b) 'Wants are often aroused by advertisements, show-windows, and circumstances of an accidental nature'.
- (c) 'There are cases in which the utility of additional units of a commodity is not necessarily less than that of the first increment—cases which are indicated by the proverb: 'Appetite comes by eating'.
- (d) Time is money.

17. What are the obstacles in the way of making the marginal utilities equal in the actual division of income? Discuss them.

18. Comment on the following statements:

- (a) 'The motto of expenditure should be to derive equal utility from each unit of expenditure.'
- (b) 'A man will cease consuming water before further increments possess no utility, if it is his intention to consume other goods that provide a greater utility-surplus than additional increment of water'.

19. 'The art of getting the maximum satisfaction out of a given income, consists in balancing one's consumption'.

What does the balancing of one's consumption consist of? Explain fully.

## Chapter VII

### SPENDING OF MONEY

**Family budgets.** An interesting study of the distribution of one's income over various heads of expenditure is furnished by family budgets. A complete statement of the income and expenditure of a family is called a family budget. We are here concerned with its expenditure only, because we are discussing the theory of consumption. Careful studies of family expenditures clearly show how man endeavours to make the best out of his income by properly balancing his consumption. How with every change in the prices of the commodities or in his own income, or in his habits of consumption, he gives a serious thought to his expenditure and makes alterations, if necessary, is too well known to all of us from our practical experience. He may make a few adjustments here and there or at times even recast his whole budget. But whatever changes he makes, his only object is to get as much satisfaction as possible out of his income. This is possible only when he arranges his saving and spending in such a way that pie

worths of every thing yield at the margin the same satisfaction.

**How to collect budget information.** To understand how the principle of balanced consumption works out in practice, it is necessary to collect family budgets. But before an attempt is made to collect facts and figures about them, we must learn how to get the correct information required for the purpose of our inquiry.

*Time.* Time is the first thing to be decided upon, to which the proposed inquiry is to relate. It is only for a certain period of time that income and expenditure of an individual or a family can be calculated and compared. No doubt the consumption of commodities continues without a break; yet to facilitate the task of taking stock it is indispensable to imagine a break in its course at the end of a period and compare it with the income that has accrued within the same period. The period may be a week in case of people who earn weekly incomes, a month for those who are paid for their efforts after a month, or a season for those who, like farmers, sow and reap two or three crops in the year. A week is at times too short a period to reflect relative importance of different items of expenditure that comprise a family bud-

get, while six months may be too long a period from the point of view of easy calculation and clear understanding. A period of one month which is neither too short nor too long is probably the best and most suited for the budget of consumption.

*Questionnaire.* The investigator should put down the questions that he is likely to ask for the purpose of his investigation. This enables him to get a clear-cut notion of the nature of the information needed. To make the task of investigation easy, the questions ought to be classed under suitable broad headings. Those that fall under one class should be simple, plain and quite relevant to the inquiry. They must be capable of being easily and quickly understood by the people who may be illiterate and whose condition is being investigated. Such questions as are likely to cause annoyance should be either avoided or worded very tactfully and carefully. Questions touching self-respect or private life are generally of this nature.

*Representative family.* The next thing to do for the purpose of collecting material for the construction of a family budget is to select a family which is fairly representative, that is to say, the type of which is most commonly met with. It should neither be too big nor too small. If a

farmer's family is selected, it should not be an extraordinary family. If an artisan's family is selected it must be as typical of the class as possible.

It should be carefully borne in mind that very few people especially in villages keep a detailed account of their expenditure. The typical men have to be selected out of them. Hence if they are approached they supplement their accounts from memory, and the memory is apt to be biased by notions as to how the income ought to have been spent especially when the accounts are put together for another's eye. If, however, those are approached who keep careful accounts and are willing to give correct information voluntarily, they are often not typical. But this should not discourage the investigators, whose skill lies in extracting out of the typical family the information they require.

*Conducting of inquiry.* In order that the object of inquiry may not be defeated, the investigator ought to convince the informants at the very outset that he is no agent of the Government because he is likely to be mistaken for one; that he is not collecting facts and figures to get their revenue or taxes enhanced for otherwise the poor villagers will be suspicious and frightened and will pro-

bably not give correct figures of their income and expenditure; and that he is conducting that inquiry for a definite purpose which must be clearly stated.

The questionnaire must be read carefully before a question is put. If the investigator knows full well what sort of information he seeks to gather, he can subject the informant to a searching examination if necessary and thereby get the information tactfully out of him. Before the inquiry is actually started, it is necessary to make friends with the informant. The investigator will always find it to his advantage to speak kindly and gently to him and to make him feel that he is keenly interested in his welfare. But he should not either joke or laugh too much during investigation, because too much indulgence in these matters usually leads the other party to think that the investigator is not serious about his business. If this impression is created, the informant finding that his time is wasted would like to go away. Haphazard questions generally confuse the informant. He should, therefore, be asked such questions as are closely connected to one another and belong to one single group. This course will make his task of supplying correct information much easier. The infor-



ments are generally not very intelligent and quick-witted. They take much time in recalling facts and figures. Hence sufficient time must be allowed for the answer of a question before another question is put. If it be suspected that answers are not trustworthy and that the facts supplied are distorted, exaggerated, coloured and unreliable, a gentle cross-examination may be undertaken, but the informant should not know of it, otherwise he would resent it. Immediate neighbours may sometimes be consulted with a view to verify the facts and figures collected. If still there is any doubt about the accuracy of the information, it should be rejected. The more probable and trustworthy facts alone ought to be accepted.

In order to estimate the losses of the informant, the investigator should state a few common sources of loss to him and thereby set the memory of the informant at work to think out if he has suffered any. He may, for instance, suggest in the case of a potter that the pots usually break before and after they are baked; in the case of a farmer that wild animals, birds and erosion damage his crops; and in the case of a goldsmith that his goods are subject to theft.

Ignorant people are not likely to supply infor-

mation in the form in which the investigator would like to have it. He himself is, therefore, required to convert it to proper form and not unnecessarily trouble the informant through a volley of questions to do the same for him. The farmer may not be able to tell him exactly what quantity of corn was produced from his fields. He may, on the other hand, tell that it must not have been less than four cart-loads. This can be turned into maunds by knowing the capacity of a cart. In the case of a farmer, it may further be necessary to convert a part of his produce into money. A good deal of grain, fruit and vegetables, which enters into his consumption is grown by him. That is his income as well as expenditure. But this expenditure is in kind whereas his other expenditure is in money. To make it fall in a line with his other expenditure, the expenditure in kind has necessarily to be turned into money. This conversion, in fact, should be based on the prices of those articles at the time of consumption. Such prices, however, cannot be had. Hence the prices of those things prevailing at the harvest time ought to be used, though this can hardly be said to be the right procedure. For this reason, the budget of consumption must contain not only the total expenditure in money but the

quantities and the rates of the commodities as well.

At the time of investigation, short notes are enough for the answers returned. But as soon as the inquiry is over, the information must be duly entered, otherwise facts are likely to become mixed up or slip away from memory.

We now give two specimen family budgets, one of a teacher and the other of a goldsmith, for the guidance of the students. The information was actually collected.

FAMILY BUDGET OF CONSUMPTION  
FOR OCT. 1933

*Name*—Kripa Shanker Misra.

*Occupation*—Teacher.

*Residence*—Daranagar, Benares.

*Members of family*—Adults four, 3 men and  
1 woman.

Children three, two of 11  
and 5 years and one  
infant.

Income of Pt. Kripa Shanker is Rs. 320 per month. It is subject to 5 per cent emergency cut. Hence he receives Rs. 304 p.m.

Articles	Quantity	Rate	Value	Remarks
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## I. FOOD.

(a) *Food grains and pulses :*

Wheat flour	50 srs.	10 srs. a Re.	5 0 0	
Gram flour	6 „	12 „	0 8 0	
Rice	10 „	6 „	1 10 6	
Arhar	5 „	7½ „	0 10 6	} taken by turns.
Urd	5 „	8 „	0 10 0	
Moung	4 „	7½ „	0 8 6	
Masoor	2¼ „	9 „	0 4 0	

(b) *Fruits and Vegetables :*

Vegetables ..	..	12 0 0	miscellaneous.
Fruits (green)	..	18 0 0	mostly grapes and apples.
„ (dry)	..	6 0 0	assorted.

(c) *Others :*

Milk	93 srs.	6 srs. a Re.	15	8	0	three seers a day.
Ghee	10 „	1 sr. a Re.	10	0	0	
Mustard oil	2 „	6½ as. a sr.	0	13	0	
Sugar	7 „	3½ srs. a Re.	2	0	0	
Sweets	..	..	4	4	0	on Diwali day.
Salt	1 seer	..	0	1	6	
Spices	..	..	1	8	0	assorted.
Pan and allied stuff	..	..	4	0	0	
Tea	½ lb.	..	0	10	0	

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84 0 0

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## II. CLOTHING AND JEWELLERY:

Razais	2	..	12	0	0	} for com- ing win- ter.
Blanket	1	..	5	0	0	
Pillows	2	..	0	12	0	
Woollen pullovers 2 (for children)		..	2	12	0	
Dhotis	2	..	3	0	0	
Shirt	1	..	1	6	0	
Shoes (tennis)		..	1	2	0	
Dress ( " )		..	7	0	0	
			<hr/>			
			33	0	0	

## III. SHELTER :

House-rent	..	16	0	0	
House repairs	..	8	0	0	Diwali white wa- shing.
Furniture and utensils, 2 brass tumblers	..	1	0	0	
Light, electricity charges		5	0	0	as. 8 per unit.
Fuel	..	4	0	0	soft coke.
			<hr/>		
			34	0	0

## IV. HEALTH AND EDUCATION:

Doctor's visit	..	10	0	0	child birth.
Medicines	..	3	8	0	
Tuition fee of boys	..	15	0	0	B.A., and High School students.
Newspaper..	..	1	8	0	
			<hr/>		
			30	0	0

## V. SERVICES AND ENTERTAINMENTS:

Barber (for hair-dressing)	1	0	0	four times in the month.
Auto-strop razor	..	0	8	0
Blades for the same	..	0	8	0
Washerman ..	..	3	0	0 paid p. m.
Maid-servant ..	..	4	0	0 in addition to meals.
Cook ..	..	6	0	0
Cinema visits by entire family ..	..	9	0	0 two visits.
		<u>24</u>	<u>0</u>	<u>0</u>

## VI. MISCELLANEOUS:

*Travel:*

A trip to Allahabad	..	2	12	0	Inter class return fare.
A trip to Ramnagar	..	1	6	6	

*Communication:*

Letters and post cards	..	2	0	0	
Charities ..	..	8	0	0	students' fees.

*Taxes:*

Income tax ..	..	11	11	6	
Debts paid ..	..	25	0	0	
Extras ..	..	1	10	0	
		<u>52</u>	<u>8</u>	<u>0</u>	

## VII. SAVINGS AND INVESTMENT:

Life assurance premium	..	18	0	0	Insured for Rs. 3,000.
Provident Fund	..	16	0	0	
Cash	..	12	8	0	
<hr/>					
46			8	0	
<hr/>					

## SUMMARY OF THE CONSUMPTION BUDGET

Main heads of expenditure	Expenditure	Percentage to total expenditure
	Rs. as. p.	
1. Food .. .. .	84 0 0	27·6
2. Clothing and Jewellery	33 0 0	10·9
3. Shelter .. .. .	34 0 0	11·2
4. Health and Education	30 0 0	9·9
5. Services and Entertainments	24 0 0	7·9
6. Miscellaneous ..	52 8 0	17·2
7. Savings and Investments	46 8 0	15·3
<hr/>		
304 0 0		100%
<hr/>		

Below is given a summary of consumption budget of Bhairon Pd., goldsmith, New Katra, Allahabad, for the month of October 1933. The family consists of 2 men, 1 woman, 2 youths and 1 girl. The budget has been prepared on the same lines as the preceding one of a teacher.

Main heads of expenditure	Expenditure	Percentage to total expenditure.
	Rs. as. p.	
1. Food .. ..	56 8 0	46'5
2. Clothing and Jewellery	9 10 0	7'9
3. Shelter .. ..	8 12 0	7'2
4. Health and Education	14 0 6	11'5
5. Services and Entertainments	15 7 0	12'7
6. Miscellaneous ..	6 8 0	5'4
7. Savings and Investments	10 12 0	8'8
	<hr/> 121 9 6 <hr/>	<hr/> 100 % <hr/>

Health and education item is heavy because



it includes the tuition fee of a son studying in the Allahabad University. The fifth item also is rather high because some of the members visited a dramatic performance given by a noted company that visited the city during the month.

On comparing the two budgets it is seen that the percentage expenditure of the goldsmith on food is more than that of the teacher, but that on clothing, shelter, misc. and savings is much less. Actually the teacher is spending more on every item than the goldsmith though the percentages give a different picture. The quality of food articles which he uses is better, so also that of clothing, while a house of a better type has to be hired. Health and education, and services items are bound to be expensive, as two sons of the family are receiving education, and two servants are engaged for domestic service. Contributions to Insurance and provident fund show that the teacher is prudent and tries to save a substantial amount for his children.

If the teacher's and the goldsmith's budgets be taken as representatives of the richer and the poorer men's budgets, it will be inferred that a greater portion of money is spent by the poorer man on his subsistence, leaving a smaller sum for

comforts and items of self-improvements than is the case with the richer men. Poorer people cannot usually afford to educate their children as higher education is expensive. If they try, money available for other items like miscellaneous and savings is reduced still further.

**Engel's law.** Family budgets have often been collected and compared. The first important study of them was made by Dr. Ernst Engel, the great German Statistician who collected hundreds of budgets of German families living in Saxony in 1857. By a close and comparative study of these budgets he arrived at the following conclusions with regard to domestic expenditure:

1. The larger the income, the smaller was the percentage of it spent on food.
2. The larger the income, the greater was the percentage of it spent on education, health, recreation, amusement etc.
3. Whatever the income, about the same percentage of it was spent on clothing, rent, fuel and light.

The following table shows the percentage of the expenditures of the poor, the middleclass and the rich families of Saxony, on the basis of which the above-mentioned inferences were drawn.

## ENGEL'S STATISTICS

*Yearly income of families*

Items	Poor	Middle-Class	Rich
	£45—£60	£90—£120	£150—£200
	per cent	per cent	per cent
1. Food ..	62	55	50
2. Clothing ..	16	18	18
3. Lodging ..	12	12	12
4. Heat and Light	5	5	5
5. Education and Religion.	2	3·5	5·5
6. Legal protection	1	2·0	3·0
7. Care of health	1	2·0	3·0
8. Comfort and recreation	1	2·5	3·5
Total ..	100	100	100

The striking uniformity in the habits of consumption of large classes of people as discovered by Dr. Engel led several inquisitive persons to collect family budgets in almost every country and

compare them. Though the results of various investigations did not quite tally with the inferences of Dr. Engel, yet the first and the second conclusions of Dr. Engel were found to hold good in all cases. Food supply, in fact, is the first concern of every consumer whether rich or poor, and the minimum of subsistence is almost the same in each case. The difference in total food expenditure is due to greater variety and a better quality of food articles consumed by the comparatively richer people and this is not proportionately as expensive. That is why the percentage expenditure on food does not increase proportionately to increase in income though the amount of expenditure grows. Again, if a greater expenditure is taken up by food, the margin for health, education, recreation etc., will necessarily be small with the poorer families, the richer ones spending greater percentage which means greater amounts also on these items.

Nothing definite can be said about clothing and lodging with regard to Indian families. Due to temperate climate over a longer period of the year and generally mild winter the essential items of dress need not differ much; but the castes and social divisions and also western and eastern modes of life introduce far greater differences in expen-

diture which may be much above or below the expenditure in proportion to incomes. Then there is no similarity in housing requirements. It is difficult to fix any standard of accomodation for a family in India. Here neither bath rooms nor drawing rooms are indispensable; kitchen may be used to sleep in; or at times two rooms may serve for every household need of the family. The richer people, on the other hand, have commodious houses and spend a lot on their establishment. It is the individual taste and circumstances that determine the expenditure on dress and shelter and it, therefore, varies much from family to family.

#### PURPOSES SERVED BY FAMILY BUDGETS

**To the householder,** family budgets are of great importance. He cannot afford to let money slip through his fingers, and the most effective check he can have over his extravagance is his budget of consumption. A glance through his budget will tell him whether he is spending within his means, and if not, where is the leakage which needs stopping. By comparing budgets from month to month he can locate the items where economy is possible or where a little greater expen-

diture will result in great well-being and higher efficiency.

Thus family budgets regulate his expenditure and direct it on proper lines. They teach him foresight and thrift. Man is not so much a creature of reason as a creature of habit or impulse. He is apt to over-estimate the importance of present wants and under-estimate that of future ones. Wants are often aroused by fashions of the time, glowing advertisements, attractive show-windows and the manner in which an article is pressed upon the purchaser, or other circumstances of an accidental nature. Hence the householder, even though his income and prices of the commodities remain constant, has always to assess properly the value of all his wants, present and future, to give each its due importance in his expenditure with the object of getting the greatest satisfaction. The art of securing the maximum satisfaction out of a given income consists not only in distributing expenditure so as to get as much satisfaction from the last unit of money spent for one thing as from the last unit of money spent for another, but also in distributing expenditure over different periods of time in such a way that the last unit of money spent at one time gives as much

satisfaction as the last unit of money spent at another.

To the economist, family budgets provide an interesting study. Through them he can have an insight into the real economic well-being of the people whose budgets he studies. To understand the change in taste, fashion, customs and manners, the family budgets are the best indications, as every change must be truly reflected in them through expenditure on various items. Whether a class of people are consuming the right kind of food and are getting decent dress and ample house accomodation; whether they are spending a reasonable amount on the education of their children and maintenance of their health; whether ordinary comforts and luxuries, on which the richness of life depends, are within reach of the people; whether the distribution of money over several wants is best suited to promote real material advancement; these and similar other questions can be satisfied with the help of family budgets alone.

We can understand from the study of family budgets how poverty itself is a bar for the poor to their escape from poverty. A very high proportion of their income is taken away by food and all the rest is used up in clothing or housing. Their

higher wants are hardly satisfied, while the satisfaction of higher wants is necessary for a man's complete efficiency as a producer. Hence they are never able to increase their efficiency, nor receive good wages to improve their condition and get rid of grinding poverty.

Family budgets also help, though to a limited extent only, in tracing a causal connection between changes in prices and variations in demand. The budgets of consumption of working classes may afford a very accurate indication of changes in consumption consequent on variations in price. **To the statesman**, family budgets are of immense value. From them he can have a reliable information of the standard of living the people enjoy. Through them he can realise the need of any legislative measure to regulate or prohibit the consumption of harmful articles. There is no better means than the family budgets for understanding the effect of any taxes levied on articles of general consumption. The budgets can distinctly show which articles enter into consumption of the rich or the poor, and on this basis it can be determined whether the burden of a tax will be borne mostly by the rich or the poor. They can also serve to show that the progressive rate of taxation is likely



to stop unnecessary consumption and benefit the public at large through a more even distribution of money thus realized.

### EXERCISES

1. What is a budget? Is there any difference between a family budget and a government budget? Is government also a consumer?
2. Prepare an imaginary budget for a muslim tailor's family of five (a father, a mother, two daughters, four and fourteen years of age, and a son eighteen years of age). Figure out the percentage cost of each group of items to the total cost of the budget in question. How does this budget compare with your own budget of consumption? What explanations have you to offer as to differences?
3. What is Engel's law of consumption? How far are its conclusions applicable to Indian conditions?
4. What are family budgets and what are they useful for? To the householder? To the economist? To the statesman?
5. How do you collect budget information, when your teacher wants you to do it? Take the cases of a farmer and a potter to illustrate your answer.
6. The following are the expenses of a labourer:  
Ata -2/6 a day; pan and biri -1/3 a day; wood Rs. 2/-

a month; oil and ghi Rs. 2|- a month; rice -|-6 a day; a pair of shoes Rs. 2|4 a year; house-rent Rs. 3|- a month; sweets -|8|- a month; vegetables -|-6 a day, sweeper -|4|- a month; charpai Rs. 1|2 a year; kerosene -|2|- a week; dhotis Rs. 3|- a year; salt -|2|- a month, country liquor Rs. 2|- a month; other clothes Rs. 3|12 a year; debt payment Rs. 2|- a month; religious and social expenses Rs. 6|- a year; travel Rs. 3|- a year.

Calculate all expenses on a monthly basis (a month = 30 days or 4 weeks) and classify all the expenditure under general heads. Compare the expenditure percentages with those obtained by Dr. Engel.

7. Draw up the family budget of a school clerk getting a monthly pay of Rs. 50|-. Have you any comments to offer? How will it compare with the budget of a barber?

## Chapter VIII

### CLASSIFICATION OF WANTS

**Certain wants are more urgent than others.** Though there are numerous wants that are felt by a person and all of them are satisfied to a greater or lesser degree, his desire to secure their satisfaction is not equally strong. To the satisfaction of certain wants he applies himself more intently and vigorously than to the satisfaction of others. For instance, it will be his first concern to satisfy his want for food, and only after it has been satisfied that he will think of an article of dress or house accomodation. And again he will prefer an article of dress or house accomodation to a chair, a book or visiting a cinema show. Even in case of food, he will like to have bread or rice and pulse in preference to seasoning or milk. This preferential treatment that he extends to some wants in comparison to others is due, in the first place, to his realization that the former are more urgent than the latter, more urgent in the sense that they are felt more strongly or intensely, and if not satisfied, will cause greater pain than the others will do.

The objects of some of the wants are more attractive. Another reason why an individual prefers one commodity to another is the attractiveness he feels towards it. And this attractiveness may get possession of his desire so completely that he may prefer the more attractive, though less substantial, to a less attractive, yet on the whole more substantial, commodity. For the sake of such more attractive things he may, at times, sacrifice some real enjoyment of life and even stint the more urgent wants like that for food. It is the individual temperament, interest and training that decide for a man which commodity is more attractive, thereby determining his choice. He may, for example, readily attend to a musical performance which has greater attractiveness for him, than to secure a hearty meal with the same sum of money.

**Durability is another basis of distinction.** Certain commodities that enter our consumption, give only temporary satisfaction while others continue to be a source of satisfaction over a long period. A dainty dish satisfies hunger for a few hours while a chair or a pen or a house lasts for months and years, and throughout its long life satisfies human want.

It is the time element which decides whether a commodity gives a particular satisfaction transiently or more or less permanently. Of the two commodities one may be more durable than another, while the more durable one of these two may be less durable when compared with a relatively still more durable commodity. A chair may be more durable than a pen, and a house still more durable than even a chair.

While knowing that a want is felt over a long period and that there is the required commodity to satisfy that want, a poor man may have to be content with a make-shift commodity that serves the purpose for a short while. Brass or copper utensils last longer than the aluminium ones, but as the latter are cheaper, or at least seem to be so at the time of purchase, the poorer people go in for them and realize only some time later that it would have been wiser for them to buy the brass or copper pots. Brass or copper pots, though their initial cost is comparatively more, are cheaper in the long run as they have longer life, are easily burnished and when broken can fetch some money. But the comparatively high cost in the beginning discourages the poorer people who cannot afford such a high

expenditure. Truly has it been said that economy can be practised by the rich alone.

#### WANTS KNOWN AS NECESSARIES.

**Necessaries for life.** It has been discussed in the first paragraph of this chapter that certain wants are relatively more urgent than others and that an individual's first concern is to satisfy the more urgent ones. But there are certain wants that are most urgent of all because, if they remain unsatisfied for some time, they not only cause intense pain but may also lead to one's death. To maintain health and strength, one needs a certain quantity of wholesome food articles howsoever commonplace they may be. There is, however, a limit to their quantity and quality below which one cannot afford to go for fear of having his health impaired and his life endangered. Similarly there are the minimum requirements of dress and shelter which are essential to protect one from getting heat stroke in summer or pneumonia in winter. All these *minimum requirements* of food, clothes and shelter constitute one's bare or absolute necessities for life.

Necessaries for life are not identical with primary wants. Food, dress and shelter are called

primary wants, because compared to others, they are more urgent and it is one's primary duty to satisfy them in preference to secondary ones. But this preference hardly provides enough justification for all the articles of food, clothes and shelter to be called necessities for life. Out of one's consumption of numerous food articles, one can safely preclude a number of them without endangering his life. So also a number of articles of dress may be superfluous and some rooms or furniture in the house redundant from the point of view of maintenance of life. Life is possible without a frequent change of dishes, spices, chutneys and similar other things; none is known to have breathed his last in the absence of a tie or silk suit, nor will there be a casualty if a household lacks a separate dining room or a parlour or china crockery. All these things are used or consumed along with the minimum of food, clothes and shelter which minimum alone constitutes one's necessities for life and must be distinguished from them.

**Conventional Necessaries.** If a person had to lead a solitary life, his primary needs would have been decided on the sole consideration of keeping himself alive. But living as a member of society, some of his wants are dictated by the

customs and manners of his neighbours. For instance, it is regarded as a necessary formality to offer *pan* or a smoke to a visitor to your place. In marriage, death and other ceremonies friends and kinsmen are to be invited and entertained in accordance with the prescribed form. All such requirements which help in building up one's respectability in the estimation of the particular section of the society to which he belongs, are called conventional necessities. These are not necessities for life as the above instances make it obvious; but at times the sensibility to prestige of an individual may be so strong that he may even curtail temporarily some of his other primary wants for the sake of these conventional necessities.

Among those races and communities on whom the hold of custom and tradition is rather strong, or those who would lead a miserable life rather than transgress old rites and rituals, conventional necessities exercise a great influence. Where individualistic development had little chance and community life is the rule, the conventional necessities hold a high place among economic wants. More often than not, they become oppressive as they involve heavy expenditure which a poor man cannot afford; but because he feels bound to ob-



serve them, he does so at the expense of more important wants and consequently suffers in body and mind and in the efficiency of earning his living.

**Necessaries for Efficiency.** To maintain his efficiency as a worker or an earner of his living, a person requires not only the necessaries for life—of course, they are essential in any case—but also some extra or better food that may maintain his vigour and energy at a high level, warm clothes that may protect him from cold and chill, and a clean and commodious house with healthy surroundings. In the absence of these requirements either he will break under the strain of severe physical and mental work or fall a victim to diseases that will sap his strength more and more and reduce his efficiency of work still further. In addition to these articles he will need the use of some good tools and instruments necessary for his trade, as in their absence he will not be an efficient producer. All these things which maintain and increase a person's efficiency in any business, are called his necessaries for efficiency.

A short-sighted student can work more efficiently if he is given the right pair of spectacles to use. A workman can perform his duties with efficiency if he receives wages that will provide him

with more food, clothing and shelter of better quality than what is necessary for bare existence. The advantages received from necessities for efficiency ought to be greater than the expenditure incurred on them. If a worker has to walk down a long distance to his works where he is paid at the rate of four annas per hour, the expenditure of three annas on hiring an ekka that will take him there an hour earlier than his usual time of arrival, is the expenditure on the so-called necessity for efficiency.

#### WANTS KNOWN AS COMFORTS AND LUXURIES

It is possible to live like a healthy man and efficient worker on necessities for life, convention and efficiency alone, but there will be no pleasure in living if nothing else than the necessities were available. Certain other things are wanted to make one's life comfortable and more worth living, and these other things may be either *comforts* or *luxuries*. It is rather difficult to distinguish sharply and strictly between these two groups, yet a somewhat individualistic consideration can mark off the division pretty well. Comforts are those articles that add to one's efficiency as a worker in addition to making his living more pleasant

and comfortable. In their absence, he will neither perish, nor lose his efficiency as a producer, nor be subjected to social indignity, but they can hardly be dispensed with in a society where life is worth living. Usually the expenditure made on these articles does not bring proportionately greater advantages, as in the case of the necessities for efficiency; yet they lead to a fuller life, a richer life, a pleasant and more decent life of those that possess them. They enable one to lead a wholesome life with better chances of greater enjoyment.

Luxury is neither a necessity nor a comfort. It is needed only to serve the purpose of special or excessive variety or display or ultra fashion, and is a thing for individual indulgence. In some cases it actually results in a loss of efficiency or makes life poorer, meaner and more miserable.

All forms of necessities, comforts and luxuries should be understood in relation to man, place and circumstances. The same commodity may be a necessity, a comfort or a luxury to different persons. A cycle is a necessity to a student or to a labourer who will otherwise have to walk to his college or the factory three or four miles each way; a comfort to another student who lives much nearer the college but has to attend compulsory

games in the evenings, but a luxury to the third who resides in the hostel adjacent to the college building.

A change in the quality or numerical strength of the articles changes them from being a necessity to comfort or luxury. A shirt or *kurta* of long cloth is a necessity to a student; six of them that provide him necessary margin for wash and change may be a comfort; but to have a score of them or get them prepared of fine silk, though six in number, is a luxury. So also with a rise in the earning power of a person, an article of luxury may become a comfort or a necessity to him. To an ordinary worker in a mill, a car is a luxury, but it need not always remain so. If he makes progress and in course of time becomes an engineer, the car becomes a comfort for him; while if he starts his own business on a big scale and has to supervise it at different branches, the car may become a necessity.

Time and place also affect their position. Warm woollen clothing is a necessity to people living in the cold hilly regions of the Himalyas; it is a comfort in winter to those who dwell in the northern plains, but a luxury to those who belong to hot regions.

## STANDARD OF LIVING

If two or more consumption budgets of an individual are compared, a striking repetition will be noticed in a large number of articles which are consumed from month to month. Except for such accidental expenses as are incurred in marriage, birth, travel, entertainment of guests and the like, most of the items remain fairly constant not only in variety but also in their quality. As a result of consumption of these articles over long periods a man gets accustomed to their use, and these articles or wants for them constitute his standard of living.

Popularly speaking, a high standard of living means an expensive way of living while a low standard means a cheap living. Yet really speaking, costliness is not a sound basis of distinction between a high and a low standard. If a man spends his entire income of Rs. 100 per month, his living though high or expensive, is not as *rational* as that of another man who spends Rs. 90 only out of a monthly income of Rs. 100. The first man saves nothing and adds nothing to the wealth of society; the second man does save and thus helps in the economic progress of the society.

A standard of living must be related to one's power of producing wealth. There are people who produce not a single shell, yet are enjoying a luxurious life because their rich parents left them big fortunes. How far they are justified in enjoying the fruits of labour of other persons is a different question; but certain it is that the absence of any productive activity on their part does not warrant a lavish expenditure of money they indulge in. The society will do well, and in some countries it does so, to relieve such persons of their misplaced burdens of fortune by heavy taxes like death duties or inheritance taxes.

Whether a standard of living is high or low can be judged on the way a person spends his income. One's expenditure may lead to his self-improvement or may be undertaken in strengthening the domestic instinct of having more children and increasing the burden of their bringing up. If his expenditure is dictated by his desire for self-improvement rather than the domestic instinct, he is said to have a high standard; but if the domestic instinct gets the upper hand and becomes the ruling passion, his standard becomes a low one. Consequently, a high standard means a better life and

better efficiency and therefore higher incomes, while a low standard means a poor living, lowering of efficiency and therefore smaller incomes.

With a rise in the standard of living, the margin for savings increases in spite of increased expenditure on present needs. This margin may increase by there being a comparatively greater increment in the income than rise in expenditure, or a smaller amount of money may suffice where bigger expenditure was needed, due to wiser spending or fall in prices. In any case the savings increase. A fall in the standard of living will, on the other hand, reduce savings because either the income has gone down or prices of commodities gone up or the laying out of money on several wants has become less prudent and judicious. In any case it means less savings. Thus, as a result of a rise in the standard, the individuals get better enjoyment in life and enrich the society by their savings, while due to a fall in the standard, individuals get less pleasure or satisfaction and the society is impoverished. A high standard spells economic progress and a low one economic degeneration.

## EXERCISES

1. Differentiate between necessities, comforts and luxuries. Point out the importance of distinction among necessities for life, for efficiency, and for convention. Is 'comfort' the same thing as 'necessity for efficiency'?

2. 'Necessities consist of those commodities which increase the efficiency of the consumer at an increasing rate; comforts are those commodities which increase his efficiency at a diminishing rate, and lastly, luxuries include those commodities which decrease the efficiency of the consumer. . . . . This method of classification would rightly place liquor, generally, in the group of luxuries, while it would allow us to recognise the first few units of its consumption as necessities and some units again as comforts.'

Would you apply this test of efficiency in classifying commodities into necessities, comforts and luxuries?

3. 'The man who wants to improve the economic condition of the country must also recognise the facts, and when he has recognised them he must take such steps as are possible to persuade the people to reduce their expenditure on these conventional necessities, and to apply their income more wisely.'



Do you consider the expenditure on conventional necessities unwise? Why? Is there any attempt being made in this country to improve matters in this direction? Give examples. If you were to undertake such a work of social uplift, how will you manage and overcome the obstacles due to custom and force of public opinion?

4. Is there any difference between a conventional necessity and a luxury? Comment on the following: 'Drunkenness is a terrible form of luxury, more ruinous than any other, at least for the poorer classes of society most other luxuries being inaccessible.' Are there luxuries among the poor?

5. 'Excess' would be a better word to use for 'luxury.' 'A man no doubt falls into culpable luxury if his expenditure in certain directions is in excess of what his income allows. He, for instance, who buys an expensive watch and chain while he is not clear about being able to pay his debts is clearly buying a luxury.'

How far do you agree with the view expressed herein?

6. 'Luxury serves to maintain the poor at the expense of the rich.' Explain and examine the following in the light of this view:

'To raise the standard of life of the people of India wants should be multiplied even if some of these

wants are not of a beneficial nature. Without this progress will not be possible.'

7. Define 'luxury'. Is it justifiable?

If luxury means the gratification of a superfluous want, we may properly wish that even the poorest people might have a little luxury. 'Nature herself furnishes examples of magnificent and sometimes extravagant luxury in the way she decorates the petals of flowers, the wings of butterflies, and the bodies of small insects.'

Do you think the superfluous is exceedingly necessary?

8. 'Man apes and imitates and does things as he sees others doing them.' Has this anything to do with the habit or custom or fashion of man?

Are there any wants in the case of college students that are determined by custom?

Name the wants of a factory labourer and tell which of them are determined by (a) custom (b) habit and (c) reason.

9. 'If all men did nothing else but repeat and imitate, no change could ever take place in the way of life of a community. This, of course, is not the case. Habits and customs and fashions change gradually as surrounding circumstances change'. Explain and illus-

trate this from Indian examples. What other changes do you anticipate in future?

10. Don't you beat or fine your servant when he breaks your utensils? Why?

Will you keep a cook who cooks more food than you can eat at one meal, simply on the ground that God has created ravens and other birds and they must also be fed? Give reasons for your answer.

11. 'Comforts and luxuries alike denote things that are not necessary for efficiency, but the ordinary use of the word 'luxuries' conveys an idea of blame which is not conveyed by comforts; that is to say, when we speak of a man spending his income on luxuries, we imply that in our opinion he is not spending his income wisely, while when we speak of comforts we imply that the expenditure is more or less justifiable.'

How far is this view correct in your opinion? Name some of your wants which will fall under these two terms as defined above.

12. 'The same commodity may be either a luxury, a comfort, or a necessity. This depends upon the caste and occupation of the consumer, upon his income, and upon the price of the commodity.' Explain and illustrate.

13. 'To the class of conventional necessities belong the want of tea, coffee, and the *pan* among the

higher classes in India and the want of *buqqa* among the masses. To this class also belong all our wants connected with social and religious ceremonies, and in a society-ridden country like India it is not difficult to find people who for months and years economise on their absolute necessities to make a grand show for a day or two on their social wants.'

Narrate some of your experiences with conventional necessities and state how you would cut down the expenditure on them in your own family, when you become the head of it.

14. 'Necessaries may be defined as those wants which are imposed upon man from without i.e., either by his own natural constitution such as the wants of food and drink, or by his natural surroundings such as the wants of clothing and house-rooms, or again by his social surroundings such as the wants of offering tea or *pan* to guests and the want to do social and religious ceremonies on a certain scale.'

Name your necessities and group them according to the classification given above.

15. Can an article be a necessity, a comfort and a luxury in turns to the same individual? How? Give examples and show that it is wrong to say that wheat is a necessity and car a luxury unless the specific conditions are clearly mentioned.

16. Who can practise economy, the rich or the poor and why? Do you economise? How? What has economy to do with the standard of living?

17. What do you understand by 'standard of living'? Should it have some relation to one's power to earn?

What is an efficient standard of living? How does it differ from a cheap standard?

## Chapter IX

### HOW TO SPEND MONEY

**Money is not the end but a means of consumption.** A characteristic feature of the modern economic life is the presence of money. Though even now cases are found where a person gets the articles he wants by making direct effort or rendering personal services, money is usually spent to get the requirements of consumption. But if it is money that buys, it should not be supposed that money is more important than the things fetched by it. Money is only a means to our end, and that end is the possession and use of the articles that satisfy our wants. Nevertheless money fulfills an important function of supplying the connecting link between a man who possesses it and the owner of the articles he desires to buy, or between his wants and the satisfaction of these wants. It is a power—here we are concerned with its purchasing power—which should be judiciously used if it is to prove beneficial to the spender and to the rest of the community.

**The Art of Spending Money.** Spending is

an art and it is given to a few to be skilled in this art. Some people seldom think before spending. Being accustomed to buy certain commodities they continue buying them without considering the possibility of using cheap alternative commodities or reducing its quantity and hence expense without reducing satisfaction. They buy a fancy article for its colour or design at the price marked on it if it suits their pockets for the time being. Such people either belong to a moneyed class whose business seems speedily to get rid of their fortunes or who are too lazy or too ignorant to think what they are getting for their money and blindly obey their impulses. They buy in haste and repent at leisure when they discover to their woe that before the next instalment of their income is due they are light in purse and heavy at heart. Yet there are others who are clever enough to make their money go longer than their neighbours can, and prudent enough to lay out expenditure so that they never seem to be short of money. They know how to divide their income between present and future needs and how to distribute it on several commodities they need.

#### DISTRIBUTION OF INCOME OVER COMMODITIES.

An ideal expenditure of a certain sum of money

will ensure the maximum possible satisfaction at a particular time. This ideal is achieved when money is so portioned out on the commodities that its marginal utility in all cases is equal. This condition, however, is hard to attain. As has been pointed out earlier, there are indivisible commodities that cannot be bought or consumed in parts without losing much of their utility and in their case the equality of marginal utility is only reached, if at all, by accident. Yet it is worth while making an attempt to bring about a perfect application of the law of equi-marginal utility as approximately as possible.

Even if this difficulty had not occurred, there are certain circumstances that render the task of getting the highest satisfaction rather difficult. One may, in some impulsive mood, feel that he wants a thing though in reality there be no such need at the moment. Led by a desire to excel or equal others, a student may buy an expensive fountain pen though having quite a good one already. This hasty act will reduce the amount of money that could be spent on more urgent wants and howsoever perfectly the law of equi-marginal utility be applied to them, the loss from the expenditure on the fountain pen cannot be made up.



Sometimes people, who regard it as a matter of social distinction or a test of refinement to shop at fashionable stores and do not care to enquire about prices at smaller ones, pay higher prices for the articles which sell at a lower price in modest stores. Again, one may pay more than usual at the shops which display 'one word' and 'terms cash' placards as no bargaining is permitted there though there may be a justification for such an action. This is another obstacle in the way of getting the maximum satisfaction for one's money.

Then again, the commodity, which is being purchased and is expected to yield a certain amount of utility, may fail to come up to the expectation on actual consumption. Below a fine finish there may be a low class raw material; edible commodities may be found rotten or of unpleasant taste, or a mistake may have been made as in many cases it is done in judging the quality of the stuff and estimating its life. In short, the actual utility of a commodity may fall short of the prospective utility which was a factor that decided the high value a consumer paid when buying the article.

In all these cases, when a consumer spends unwisely on momentarily felt wants, when he pays unusually high prices or does not receive on con-

sumption of an article as much satisfaction as he expected to get on buying it, the highest satisfaction by spending a certain sum of money is not achieved. If these hindrances are overcome and also the law of equi-marginal utility is fully well applied, the maximum of satisfaction is attained.

#### DISTRIBUTION OF EXPENDITURE OVER PRESENT AND FUTURE CONSUMPTION

A wise distribution of money over present and future consumption is as important as that on wants of the present. If more money than what is enough, is spent on present wants, less than what should suffice will be left for future expenditure. The result will be that the marginal utility of money spent in the present will be less than that of money spent in the future and the maximum of satisfaction from the expenditure of money over present and future wants will not be possible.

For illustration, suppose Rs. 60/- are to be spent to meet all the requirements of an individual over two months. If he decides to spend Rs. 40/- this month and Rs. 20 next month, the 40th rupee spent this month may have less utility than the 20th rupee spent next month i.e., the

marginal utility of Rs. 40|- and that of Rs. 20|- will be unequal and hence the satisfaction by spending Rs. 60|- will be less than the maximum.

Those who realize the necessity of providing for future needs which can be foreseen or for emergencies that come up suddenly, will save some money for future consumption by reducing the present one. Those who seem to live in the present alone will let the future go unprovided for and spend their entire income in the present leaving the future to take care of itself. They may find themselves disappointed when their expectation of a steady income in future is not realized or their confidence on personal earning capacity is shaken due to ill health or bad trade conditions. Then they will realize that by spending money with judicious care over present and future wants they could have enjoyed greater satisfaction than by any other disproportionate manner. It is, therefore, essential that future wants of the same type as the present ones should be treated with due consideration and not under-estimated just because they are not immediately felt. The future wants, if unsatisfied, will cause as much pain as the present ones and it should in no case be expected to be less unpleasant or more endurable. As a

matter of fact it is more desirable to remove the distinction of time between wants that have to be satisfied to-day or tomorrow and lay out money on them as if all of them need satisfying just now.

#### SOCIAL SIDE OF SPENDING.

An individual can be trusted to spend his money as wisely as he earns it, because after all by efficient earning and wise spending it is the individual himself who primarily stands to gain. If he spends it unwisely, he is the first to suffer. This self-interest is the strongest motive to induce people to get the highest satisfaction by spending a sum of money. Therefore society does not interfere with an individual's consumption unless it is likely to harm him and reduce his power to earn, or prove a menace to his neighbours. Just as the society forbids one to set fire to his own house and endanger the life and property of his neighbours, likewise it forbids or regulates the consumption of certain commodities in his interest and also in the interest of others.

The state may totally prohibit the use of certain poisonous and dangerous articles. A noted instance was the prohibition clause forbidding the manufacture and sale of alcoholic drinks in the

United States of America. In India, the consumption of cocaine is similarly prohibited. And in every country the adulteration of food articles is counted as an offence and heavily punished.

Steps are taken to regulate the consumption of drugs and drinks by limiting its supply. Opium is a government monopoly in India, not because it is a source of income but because its unregulated consumption will probably turn India into a country of opium-eaters like Chinese, and undermine national health and character. It was such a noble motive which actuated the government of India to strictly control and reduce the exports of opium to China inspite of heavy losses to Indian revenues.

The consumption of such articles is regulated by limiting their quantity that a person may buy at one time. The articles can be sold only by licensed vendors appointed by the sanction of Provincial Government that have laid down their excise policy to regulate and discourage the use of articles like *bhang*, *ganja*, *charas*, wine etc.

Rationing is another method adopted to regulate the consumption of even ordinary articles of food like meat, sugar, flour, butter, coal, gas and others as was done in England during the War. Rationing of articles is done not because they are

harmful, but because there is not enough to go round. If no such step is taken, on account of heavy prices, the rich alone can buy the articles and the poor will go without them and suffer heavily.

The limitation of their consumption can be achieved by heavily taxing the commodities. Tobacco imported into India pays about cent per cent duty. There are many other luxuries that pay more than one third of their value in taxes. The object of such a heavy taxation is to raise the price of these commodities so that the poorer people may stop and the richer ones reduce their consumption. The commodities that have been so treated are mainly luxuries.

Expenditure on luxuries by itself cannot be condemned. There are certain luxuries that will help people in their attempt of self-improvement and make their life more worth living. They also encourage them to work steadily and regularly if they want the satisfaction of such wants. But on the score it cannot be argued that heavy expenditure on luxuries eventually proves beneficial to the individual and to the community.

It is difficult to accept that in the absence of expenditure on luxuries so many workers who are

busy in producing them will remain unemployed, because it is wrong to assume that the entire population of any country is supplied with all the necessities and comforts, and that if extra income can be spent at all, it must be spent on the luxuries. In every country there are armies of the poor and the destitute that do not get even a single square meal in the day. Why not spend the money so far spent on luxuries, on producing things that will introduce some sunshine in their wretched lives? They want flour, rice, pulses, ghee, milk and vegetables; they suffer from intense cold in winter as they cannot afford warm clothing and have to go about bare-feet; they stand in great need of books and newspapers to enlighten their dark minds. One cannot exhaust the list of such commodities—necessaries and comforts and not luxuries—which are actually scarce for a great majority of people and if their production is taken up, it will provide employment to a greater number of labourers than that which is employed in luxury industries.

As for the special and high-class skill that is displayed in luxury commodities, it can find plenty of scope in beautifying the articles of common consumption and thus give opportunity to a grea-

ter number of consumers to appreciate and enjoy the workmanship.

Luxury expenditure does not find favour even as a means of transferring wealth from the richer to the poorer people. There are better and surer means to achieve the object and one of them is taxing the rich people and spending the revenue for the benefit of the poor also. Every government does that and it can be trusted to do that well.

All this does not mean that luxury expenditure should be entirely stopped. As pointed out before, luxury is not necessarily an evil, but it has to be regulated in some of its more dangerous and undesirable forms. To effect this regulation the best methods are not the prohibition nor heavy taxes. American racketeering and smuggling of specially alcoholic drink has become proverbially notorious, and everywhere the rise in the price of the licensed commodity serves as a further inducement to people to take up smuggling and contraband production. Again, even the high prices cannot deter the addicted from the consumption of harmful articles; they rather lead to their ruin much more speedily. Education is the best remedy; only by arousing the public conscience to



the desirability of restricting the consumption of injurious luxuries, the greater measure of success can be attained.

### EXERCISES

1. Is saving another way of spending money? Who is more useful to society; he who spends more or he who saves more?

2. What is prudence in consumption? Comment on the following:

'Saving, unless it is merely hoarding, is really spending for the future. Therefore a wise balancing of present and future is secured by the mean between prodigality and parsimony. The prodigal is not a public benefactor.'

3. Is it of any consequence to society how a person spends his income? Do you not object to other people interfering with your liberty in spending?

4. How are restrictions imposed on one's consumption?

5. Would you favour total prohibition of luxuries? Why? What difficulties will you have to face in gaining your object?

# PRODUCTION

## Chapter I

### PRODUCTIVE EFFORT

**What it means to produce.** Literally 'to produce' means 'to draw wealth forth' and it is in this sense that we use the word 'production' in economics.

Man himself can do nothing but draw from the crust of the globe the materials which are to be utilised. He can neither create nor destroy matter. He cannot produce something out of nothing. He can only appropriate things and make them more useful for the satisfaction of human wants. The rivers furnish fish for his sustenance, but it is his labour which draws them forth. The earth produces grass, grain, cotton, hemp and trees of various kinds, but it is his labour which gives them all the forms of riches.

'Practically, man does nothing but pull, push, lift, press, carry or otherwise mechanically force things into new forms or new places. He pushes a spade into the ground, pulls a root out of it; he

lifts a load of firewood and carries it to the fire; he presses on a branch of tree and breaks it; and so forth'. In respect of his muscular labour, man is no better than a beast of burden but he has intellect which, if rightly used, makes him supreme. The muscular energy of his body aided by his intellect is the only agent of production which man can apply and this agent of production can operate only when there is some material to be worked upon. A carpenter must have a log of wood before he can make a table; a weaver must have yarn before he can produce a piece of cloth; a tailor must have a piece of cloth before he can prepare a shirt.

In making a table out of a log of wood the carpenter does not create anything new. He merely changes the shape of wood to give it the appearance of a table, in which form wood becomes more serviceable. In preparing a shirt out of a piece of cloth, the tailor does not make any new matter; he simply transforms the cloth into a shirt thereby making it more fit to satisfy the want of a man. The wood and the piece of cloth are already there. They possess utilities too. Wood can be used as fuel and the piece of cloth as a bed sheet; but wood cannot be used as a table, or the

cloth as a shirt before their transformations. They do not possess the utilities of a table and a shirt before the carpenter and the tailor expend their efforts upon the two materials. Wood can hardly serve the purpose of a table and therefore wood as wood may possess considerable utility but wood as table is practically useless. Wood acquires utility of a table when the carpenter lays his hand upon it to turn it into a table. Hence the carpenter by his effort adds the utility of a table to the wood. Similarly, the tailor by his work adds the utility of a shirt to the piece of cloth. Each of the two workers only add extra utility to the existing material. The same is true for any other worker. Production of wealth, therefore, implies creation of utilities and not of matter. He who adds utilities is the producer. His effort is the productive effort. And the result of this effort is the extra utility which the thing as finally made possesses over and above the utility of the material with which the producer starts work.

Utility is the attribute possessed by all goods, material or immaterial. But wealth, as the economist understands it, does not consist of all goods. It is made up of such goods only as have exchange-value. Hence production in the technical sense of

the term, means creation of such utilities only as have exchange value.

There are five kinds of utilities which man creates to produce wealth.

**Form utilities.** A man is said to create form utilities when he brings about a change in the shape or form of the original material so as to make it more fit for the satisfaction of human wants. For example, a carpenter only changes the form of a log of wood to turn it into a table. A tailor simply changes the form of a piece of cloth to make it into a well-fitting shirt for his customer. One can find innumerable instances of this nature. To cite a few more instances, clay is turned into bricks and earthen pots, metal is fashioned into coins and vessels, and timber is changed into furniture of all sorts.

This type of productive activity which is directed towards creating form utilities includes all industries, genetic, extractive and manufacturing. In agriculture which is a genetic industry, Nature, not man, grows corn. What man does is simply to accelerate the activity of Nature. He arranges seed, water and soil in a particular way and then leaves the rest for Nature to do. By changing the arrangement of matter, he brings

about the transformation of water and soil materials into corn and adds form utility to them. He makes a small quantity of seed to grow into a much bigger quantity which has the capacity of satisfying the wants of many men. Similarly, in animal breeding, fisheries and forestry Nature works and multiplies animals, fishes and trees and man only creates form utilities by feeding, protecting or conserving them in order to reap a rich harvest in the end.

In extractive industries whereby raw materials are obtained from Nature, man finds rich reservoirs or stores of wealth in existence already; he has only to extract or take them out, as for example in hunting, lumbering and mining or utilization of natural forces such as water-power. By killing animals which are already there, man simply utilizes them to better purposes. By felling down trees of the forest, he makes them more useful as fuel or as raw material for furniture.

In manufacturing industries the efforts of man are directed towards changing the form and arrangement of raw materials so as to produce finished products that satisfy human wants. For example, hides and skins are changed into boots and

shoes, cotton into piece-goods, jute into gunny bags, timber into furniture and so on.

**Place utilities.** When goods are carried from a place where they are in plenty or wanted less to another place where they are scarce or wanted more urgently, they gain in place utilities. Generally an article is not consumed at the place where it is grown, mined, or manufactured; it has got to be taken to the consumer whose want it is intended to satisfy. Food grains and vegetables are not so useful on the fields where they are produced as in one's kitchen. Coal is more useful in the fire-place or in an engine than it is near the mouth of the pit. Japanese cotton piece-goods acquire more utilities in Indian markets, and the utility of Indian jute is increased in the store-houses or factories of Germany.

Place utilities result from activities of transport. Goods are taken from those places where they have less utility to those places where they command more utility. Thus fish angled from rivers and seas acquires more utility when it is placed in the hands of the consumer. In the same way, pearls fished out of seas or jewels and precious stones dug out of earth command greater

utility when they are sent to those places where they are scarce and wanted more.

**Time utilities.** An article is said to acquire time utility, when it is preserved or stored for use at some future date, because it will have greater use at that time than at present. This includes not only keeping goods in storage but also lending and borrowing, and speculating. Winter ice, if prevented from changing, becomes more useful in summer. Potatoes, apples and other fruits and vegetables stored for supply during off-season are desired more and valued more. Food grains and cloth are usually kept by the merchants from the time when their utility is less until the time when their utility to the customer is greater.

**Possession utilities.** This kind of transformation is said to occur when the article is not changed but the owner of it is changed. It is carried on by merchants and brokers in retail trade. They do not change the form or the place of goods; they may not even own the goods. But they increase their utility by arranging an exchange between those who have little use for the goods and those who have a greater use for them. For instance, landed property and houses are generally sold through agents or brokers. Some of the



state activities also create possession utility. All that wealth which the state realizes in taxes from the richer people and spends on the poorer people in providing education, medical relief and other benefits, acquires greater utilities only by a change of possession.

**Service utilities.** In addition to all the above-mentioned transformations of material goods, these form another class of utilities which are created by human efforts even without the presence of material objects. Personal services, for example, yield direct satisfaction to those to whom they are rendered. Acrobats, magicians, dancers and *madaris* (monkey-men), all of these please the audience by their respective arts. In the economic sense, therefore, they are said to produce. Judges, teachers, doctors, actors, soldiers, policemen and a host of others are producers. They do not increase the utility of material goods, but they surely increase immaterial wealth by protecting our life and property and by giving us health, happiness and comforts.

Thus farmers and artisans alone, who produce tangible goods, are not producers, but all those also are producers who render personal services. In a word, any one who produces wealth

in the economic sense of the term is a producer. A preacher is as much a producer as a cultivator; a lawyer is as much a producer as a carpenter; a domestic servant is as much a producer as a tailor.

**Productive and unproductive effort.**

When any worker makes an effort, he tries his best to be successful in achieving his object. And when he succeeds in his object, his effort is said to be productive. Sometimes unforeseen circumstances so affect him and his work that he totally fails in his object. If it so happens, though it will happen very seldom, his effort is said to be unproductive. Generally the labour of such persons is unproductive as are unskilful or ill-judged, and fail in their intended purpose. To sink a coal-pit where there is no coal; to excavate a tunnel which falls in; to build a ship which collapses; to construct a railway where there is no traffic; to write a book which no body will buy; to arrange a concert which nobody cares to listen; such are truly cases of unproductive labour. The effort of a tailor is unproductive if he fails to make a shirt or a coat, or any other article of dress or of any use out of a piece of cloth which, in his attempt to do so, is so badly cut into pieces that he cannot possibly make any useful thing worthy of its name.

A potter may have put in his best efforts in making earthen pots but if they are so badly disfigured for one reason or the other that they will fetch no price in the market, his efforts are unproductive.

The efforts of all persons who either produce material objects or render personal services are productive, provided they satisfy human wants and are paid for.

**More productive and less productive effort.** Of greater importance is the distinction between more productive and less productive effort. Given the same quantity and quality of cloth, a tailor may succeed in stitching a better shirt than another tailor. Therefore evidently the effort of one tailor is more productive than another's. The one who prepares a better shirt will derive more satisfaction if he were to use it or will be paid more money if he were to sell it than his fellow professionalist. Compared with the efforts of artisans, those of a teacher, a doctor, a lawyer, a preacher, a soldier, a musician and a host of other workers are more remunerative and therefore more productive.

For efforts to be more productive it is necessary that they should be applied at the right *time*. In agriculture, for example, the main operations must

be performed at the proper season and time, otherwise the labour is less productive or even wasted. The skill of the farmers lies in so regulating his agricultural operations that he may, as far as possible, be working under the most favourable conditions. Ploughing and tilling must be done at a time when they are most needed. Manure must be drawn when it serves best. Harrowing, sowing, watering, weeding, reaping and all other processes must come at their proper times. In short, we must make hay while the sun shines.

The object of mechanical improvements is to render man as independent of the weather and the seasons as possible and to make his labour more productive. The windmills which would not work in calm weather have now been replaced by steam mills which can work day and night throughout the year. But the agricultural operations even to this day are at the mercy of Nature, and man has not been able so far to do more than forecast weather and be prepared beforehand to meet it.

Again, if labour is to be as productive as possible, it should be applied at the proper *place*. Mines must be sunk where the ore can be found. Salt must be made where air is dry, sun hot, breeze fresh, and place suitable for constructing

evaporating tanks. 'Different soils and climates are adapted to the growth of different products. One district abounds in luxuriant pastures, another is calculated for tillage; in one country the sheep have the finest fleeces, in another country, where these animals have but a coarse and scanty covering, the earth supplies abundant quantities of cotton.' Ivory can come only from lands where elephants flourish. Jute can be grown only in Bengal. Tea thrives best in Assam and sugar-cane in tropical or semi-tropical countries.

Time is more difficult to deal with than place. We cannot change time, but we can change place if it is unfavourable. If we do not choose to stay on the spot where we are born, we may go to some other place where we expect our labour to be amply rewarded. But the love of home is so strong that few countries, even though they be worst in respect of physical features and climate, are ever completely abandoned. Tibet and Rajputana have their scattered inhabitants who are content to live in their mother-land and develop its industrial possibilities to the best of their foresight and ability.

### EXERCISES

1. What is meant by *production*? Name the different ways in which utilities may be created.

2. 'Man can only produce and consume utilities'. Explain and illustrate this statement. What light does it throw on the question as to how far domestic servants and shop-keepers can be regarded as producers of wealth?

3. 'Production itself is a form of economy. It requires (1) that we use our working power and not let it lie idle; (2) that we use it wisely, doing the most important things and leaving the less important things undone; (3) that what we undertake we do in the most efficient way, with the least waste of effort'. Explain this statement as fully as you can. Consider whether the following should be regarded as producers:—

Beggars, sadhus, fakirs, invalids.

4. Are agriculture, arboriculture, pisciculture, and sericulture sources of wealth? What kinds of utility do they help us to produce?

Do you think that the fisherman adds place utility to the fish by taking it out of water?

Do you think that the miner adds a utility of place to coal when he removes it from the bowels of the earth and makes it more accessible at the mouth of the pit for transporting it to the consumer?

Does a gardener not add place utility to potatoes when he digs them out of earth?

5. To provide a hungry beggar with food is an act of immense utility but the poor man has nothing to give

in return, nor is he expected to do so. Does the benefactor in this case create a place utility or a possession utility by his act of transferring food, or does he create none? Discuss.

6. 'The services of those concerned in the collection, transport, sale and distribution of the fruit are as productive of value as are the activities of the actual cultivator'. Discuss.

Do cultivators, spinners, weavers, cloth merchants, and tailors all produce? How? Take cotton to illustrate your answer and show how it goes on gaining in utility as it passes from one class of producers to another.

7. 'The shepherd who rears the sheep thereby makes the transformation possible from matter in the forms of grass and herbs to matter in the form of wool, that is, into something more useful to the spinner'.

Is the shepherd as much a producer as the cultivator and the cultivator as much a producer as the artisan?

Who produces milk, the cow or the milkman?

8. (a) If your friend reading in class X steals away your Hall and Steven's shorter geometry which you no more require, does he not add place or possession utility?

(b) If a bicycle gets crooked, its form is changed. Does it not gain in form utility?

(c) My friend presented me a copy of his book on

economics. Did the book not acquire possession utility by this act?

(d) Rice of two or more years' standing becomes more tasteful to eat. Is it not because it is endowed with time utility?

9. How do you differentiate between productive and unproductive efforts? Do you agree with the following?

'Whatever our labour may be it is fruitless if it does not result in utility; but if it does so it is productive'.

A tennis player derives much pleasure from the game. Does he produce? Do you know of any among your acquaintances who do not produce?

10. What advice would you give to your younger brother who wants to settle as a cultivator and seeks to take full advantage of your knowledge of economics with a view to make his efforts as productive as possible?

11. 'A', a member of class XII, wrote to his guardian 'P', "I am as much a producer as you are. You place money in my hands because I need it more urgently, whereas I place it in the hands of those who want it more urgently than myself."

If you were 'P' what reply would you give to A? In your opinion, is a student a producer or a consumer?



## Chapter II

### REQUIREMENTS OF PRODUCTIVE EFFORT

Having understood the meaning of 'productive effort', the next thing which we are naturally inclined to ask is 'upon what does this effort depend?'

To attempt an answer to this query, we begin with the simple case of the carpenter. In his case it is necessary that he must have the material, wood, before he can make a table. This raw material is, therefore, one of the requirements of making the table. At the same time no table can be prepared without the carpenter. Without his effort, a piece of wood will not grow into a table. Thus both wood and the carpenter's effort are the two essential requirements of making the table. It may likewise be pointed out that without cotton, no cloth can be produced and without a cultivator no cotton will grow; nor will even a nail be made without iron-ore and a blacksmith. In every case the two primary requirements of productive effort are man and the raw material, or man's labour to work upon the raw material.

**Land.** Man cannot and therefore does not

create raw materials. He finds raw material in its rudimentary form on the surface of the earth, below it, and above it. Almost everywhere he finds the treasures of nature waiting for his labour to be exerted upon so as to be improved and utilised by him. Man takes as much advantage of bountiful Nature as he possibly can for his knowledge and capacity.

Trees and plants of different varieties are found on the surface of the earth. Man grows and develops them by arboriculture. There are numerous species of animals that are either hunted for their fur and meat or domesticated for food or transport purposes. Rivers big and small are used for irrigation or navigation, fishing, or weed and sand collection. No less important than all these is the surface of the earth itself which is used for farming or building and without which man can neither stand nor walk. Below the surface of the earth are found mineral ores from which are prepared innumerable things of daily use. From above the earth come rain and sunshine, air and its chemical elements that help man in various ways in his productive effort. All these materials are available to man as the gifts of nature, for nature supplies them without requiring any effort on his part.

Gifts of nature have also been called **Land**. In its narrow and popular meaning land is equivalent to the surface of the earth, its area and location. In its wider and scientific meaning it includes all the materials and forces which man obtains from nature without labour, such as soil, mineral wealth, wind and water-power, mines and lakes, sunlight, natural electricity, gravity, cohesion, wild animals, and similar other things. Land in this sense excludes human beings, domesticated animals, felled trees and artificial electricity upon which human efforts are expended. Wealth, as the economist defines it, does not include all the gifts of nature (land). Air, water and other free goods which are a part of land do not come within the term 'wealth' because they, being abundant are not bought and sold.

**Importance of land.** Man is dependent upon nature (land) for every need of his life. She gives him air, light and water, without which life itself is impossible. They are the property of no single individual or society and therefore every one is entitled to use them daily and abundantly. Apart from this, land provides man with plenty of space for carrying on all his activities. It is required not only for residence and habitation but also for cons-

tructing factories, railways and canals. From the soil man draws forth its nutriment in the form of food and raw materials; from the vast storehouse of nature he obtains minerals which he uses for making tools and implements, and all sorts of jewellery to please his eye and vanity. On the surface of land and sea and even in the air nature furnishes space whereon and in which he may rest and move to harness and control her forces and conduct his productive processes. Mere space is often a source of great value particularly in overcrowded towns and cities where great difficulty is experienced in finding the necessary room for expanding business activities. In addition to all these services which nature renders to mankind, she furnishes many things over the surface of the earth which man can obtain for a little effort on his part; for instance he can get fish and pearl from water, animals, drugs and herbs from forest, and stone and wood from mountains.

Nature is, indeed, lavish in her gifts but she does not smile equally on all peoples. While on the one hand we have the most fertile plains of India, on the other we have the most cheerless spots such as the desolate desert of Arabia and the dark and dreary land of Iceland.

Nature herself can produce in great abundance to satisfy the needs of man, but in all stages of productive effort human labour has been necessary in some form or the other for the purpose of fitting natural gifts to human needs.

**Labour.** Thus Nature supplies her gifts and man supplies his labour to carry on productive activity. Whoever labours makes both physical and mental effort. While sawing a piece of wood a carpenter appears to be performing his task mechanically and undergoing only physical strain. But let the saw deviate from the red mark on the wood and he is seen adjusting it on to it. Similarly in carrying heavy loads over the railway bridge, a coolie does not stop using his mind; nor does a farmer lose his thinking capacity as he follows the team of bullocks in making a new furrow along with the other. Howsoever mechanical or automatic a task in appearance, mental effort essentially accompanies it though in a small degree. A teacher, on the other hand, appears to do mostly thinking, a mental effort. But there is hardly a teacher who only thinks and does nothing else by way of talking or writing on the blackboard. And talking and writing involve physical effort. Thus admitting that all labour is both physical and mental, it can

be said that while one kind of labour is more physical than mental, the other kind is predominantly mental.

Labour in itself is irksome. It is on the whole unpleasant to the ordinary man. He will not go on working for nothing. He does it because he is offered some inducement which enables him to satisfy his wants. Hence the labour is undertaken partly or wholly with a view to some material gain. A person's effort, very strenuous though it may be, will not be called labour in the economic sense of the term unless it is intended to satisfy some of his wants by producing the required commodity, or to earn him a money income. A student's effort to play the game of hockey, though requiring his entire energy, is not labour unless he plays as a professional player and is paid for his game. Amateurs playing cricket are not supposed to be undertaking economic labour but the professionals who share the gate-money, are. Efforts of swimmers in crossing the Ganges or of the harriers in running the cross-country for the pleasure they derive from these activities are not labour; nor is the social service that is rendered to the poor or the diseased, nor the labour of love that is undertaken for the benefit of one's friends and relations, called labour. Wicked

though it appears, the desire for material gain is the essential condition of an effort being called labour.

**Labour and Labourers.** The terms labour and labourers are synonyms; by labour is meant the labour force or the labouring classes. Strictly speaking labourer is the agent that puts forth labour or economic effort; but there is no contradiction in using the term 'labour' for the term 'labourer' because labour is inseparable from the labourer. If a labourer wants to sell his labour, he cannot do so unless he himself is present at the place where his labour is required. A fruit-seller sells his fruits but does not sell himself, that is, his person, along with them; the consumer takes away the fruits and the fruit-seller retains the possession of his person all the time. But when, and if, the labourer sells his labour or allows the employer to utilise his labour in the way he thinks best, the labourer sells, in a way, his person for the time being. He cannot sit at home and sell his labour or services to the employer and be paid for that. Consequently, when it is said that labour is cheap or dear, efficient or inefficient, it is understood to mean that the labourers are cheap or dear, efficient or inefficient. The reverse is also true likewise.

**Dignity of labour.** Producers either work individually or as members of a group. If they work individually, they are their own masters. If they work in a group, either some of themselves take up the conducting of the productive activity or there are employers under whom they have to work. All these producers, either individual producers or the employers and the employees, form the labour force. Sometimes an invidious distinction is made between labourers who put in manual labour as employees, and the labourers under whom the employees work and who are called employers. The employees are treated as making up the lower or the subordinate class while the employers are treated as higher or superior class. If the distinction rests here, no fault can be found with it. It becomes undesirable when the employees are looked down upon and treated with arrogance and contempt by the employers and others having a similar mentality. At times certain occupations like those of a scavenger or domestic servant are regarded as low and mean and the labourers employed in them as menials.

It is only those who do not realise the dignity of labour that make such a distinction. They forget in their zeal of supporting their cause that



the so-called high and low or noble and mean workers are equally indispensable to keep the society going. If a person works honestly and proves himself, or the results of his labour, useful to others who pay for his efforts, his labour is equally noble with others. Social service is the aim of all labour and the society will suffer in the absence of one kind of labour as in that of the other whether high or low. A millionaire employer finds the services of the stoker in the engine room indispensable and the society finds both of them useful for industrial production. The viceroy of India and a village chowkidar form parts of the same administrative machinery. A scavenger of our bye-lanes contributes as effectively towards maintaining cleanliness of the town-area as the health-officer. Though different persons serve in their own way and the effort of some is more productive than that of others, yet there is no ground to attach greater prestige to one than to another if we look from the point of view of meeting social needs. A false prestige attached to one occupation does not make it nobler as the labour required in this as in other occupations is essentially similar in nature and motive.

## EXERCISES

1. What is meant by the term 'land' in economics? To make your meaning clear give examples. What functions does 'land' perform in the production of wealth?

2. 'Land has been termed the 'mother of wealth'. Everything useful to the life of man springs from the ground'.

How far do you agree with the meaning of the term 'land' and with the view expressed in the above statement?

If 'land' is mother, what is labour then? And why?

3. How far is it justifiable to use the word 'land' for gifts of nature?

Some economists prefer to use the term nature to denote what others describe as 'land'. Is 'nature' not a more suitable term to use? Or do you think the word 'nature' is likely to make confusion worse confounded, because it has many shades of meaning in ordinary use?

4. 'Besides the surface of the ground, 'land' includes what is below the surface and what reaches the surface from above'. Explain and illustrate.

Will you include water-power or 'white coal' in land or regard it as a separate requirement of productive effort in view of the recent great development and of the immense possibilities of hydro-electric power?

5. Is man not a part of nature? Why does the economist consider these two separately?

Land is the mother of wealth. Is it not wealth itself? How do you differentiate 'wealth' from the 'source of wealth'? Is man, the father of wealth excluded from the term 'wealth'?

6. "By land is meant the material and the forces which nature gives freely for man's aid in land and water, in air and light and heat."

"The word land includes the whole of animate and inanimate nature (exclusive of human beings only) which is of some help in the process of production". Which of these two definitions of land is more satisfactory and why?

7. 'When a man buys a piece of land, he buys the air and sunshine above it, the minerals beneath it and the water-power within its boundaries. It also includes wild fruits and wild animals, in fact whatever man obtains from nature without labour'. In the light of this definition of land, consider whether the following can be included in land:

Agricultural land of old and advanced countries; fishes preserved in tanks; games and trees of preserved forests, and fruits and flowers of public parks; mountains; seasons; coastline; seaports; temperature; magne-

tism; tides; cotton fibre; crops; geographical position of India; climate; and 'white coal'.

8. Is labour the same thing as a labourer? Why? Explain the following:

"Human agents of production are not bought and sold as machinery and other material agents of production are".

9. 'Labour is the exertion of body or mind which is not undertaken solely for the pleasure of the work itself but rather with the purpose of obtaining an income either in cash or in kind.'

In the light of this definition of labour, discuss whether the exertions of the following ought to be included in the term 'labour' or not:

A thief, a gambler, a mendicant, a teacher when he shaves, a barber, a student when he plays or reads, a man who sings, a school-boy who walks to his school, a coolie, a mother who looks after her child, a scout, and a research scholar.

10. Estimate the economic importance of land and labour, and show how one is necessary for the other in production.

11. Are you justified in looking down upon the sweepers and the *chamars*, the so-called untouchables with an eye of contempt? From the point of view of

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social production, in what way are you superior to them?  
How do you regard the Harijan work of Mahatma  
Gandhi?

## Chapter III

### REQUIREMENTS OF PRODUCTIVE EFFORT (*Contd.*)

**Capital.** Land and labour are the two primary requirements of production. Labour can work upon the gifts of nature but only to small consequences. If a man be forbidden to use any kind of tools and instruments or material aids, he will undoubtedly produce but only by way of plucking fruits and berries and sometimes pouncing upon small animals and birds and killing them. Teeth and nails, however sharp and long, can ill serve a man in getting him enough to eat, nothing to say of provision of clothing and shelter. The results of primitive efforts of production were poor and uncertain and did not make life worth living in ancient times. It must have been a very hard life for men in the early stage of creation. Land and labour hardly sufficed to satisfy the wants of primitive men; how can they be expected to satisfy human needs today when wants of man are numerous and complex? The need for some external aids in the forms of tools and implements has ever since been felt to increase the efficiency of production.

And it is these material aids that are called capital.

**Definition of capital.** Capital may be defined as all that *wealth* which man has produced and uses for the purpose of further production, and not for his enjoyment. It depends for its existence on the excess of production over consumption. When wealth is produced as a result of labour working on the gifts of nature, it may be partly or wholly consumed. In case there is a surplus after present requirements have been satisfied, it is left over for future use and is called savings. These savings if utilized with the purpose of bringing in an income are capital. The intention of obtaining an income is essential before saved wealth can become capital. Cultivators usually retain a portion of their crops to be used as seed in the future; that portion of their crop, therefore, is capital.

**Capital, money and wealth.** Capital is goods and not a quantity of money which is merely the purchasing power. Capital is an instrument of production, while money is its value. Capital and money therefore cannot mean the same thing. Money is, however, often used by the businessman to mean capital in the sense that if his business failed he would have so much amount of money either in hard cash or in the form of land, building, machi-

nery, goods and so forth for paying his debts. Even if money were taken to mean capital, it could be so only when money was invested to yield an income and not hoarded. To avoid confusion arising from the diverse uses of the term 'Capital', it is proposed that the word 'Capital' should be taken to mean the money value of capital goods, and the expression 'Capital goods' be preferred to 'Capital' meaning instruments of production.

Money is wealth because it stands for all those goods that can be bought with it. But all money is not capital because all wealth is not capital. A part of the wealth is meant for consumption alone or for the sake of mere enjoyment that can be derived from it. It is not used to earn an income: it is not an instrument of production. At the same time it should not be supposed that any source of income is capital. Though the skill of a doctor or a lawyer is a source of income to them, it cannot be regarded as a form of capital. The economist excludes from wealth all personal abilities, capacities, or faculties though they so largely contribute to the efficiency of a person. In fact, we cannot define capital as *anything* which gives income, because then it will include land and labour also.

Though all wealth is not capital, yet all capital



is wealth. Capital is after all a kind of wealth. It is an instrument of production, whereas wealth is merely an object of consumption. One is production wealth; the other is consumption wealth.

**Origin of Capital.** Capital is a labour saving device and in essence stored labour. Suppose a fruiterer, having a garden of his own, plucks fruits off the trees in the morning before he sells them in the market. If he had no external aid to help him he will have to climb up the trees and pluck the fruits that will be within his reach. But he will find that he cannot collect many in spite of serious attempts. If he works for a couple of hours and gets a branch of a tree—a bamboo will be very handy—, fixes a cross-wood at one end and uses it in plucking the fruits, his efforts will be richly rewarded and he may even be spared the trouble of climbing up the trees. This simple device saves his labour and at the same time makes his efforts more productive. Yet this simple device is nothing but a material form of his two hours' labour, and now when he uses this instrument, it can be said that he is working with his past labour of two hours.

Not to speak of this instrument, even big machines used in mills, factories and workshops represent stored or crystallised labour of a number

of skilful miners, foundry workers, designers, engineers and all those who have helped in the past in getting these machines ready. They are undoubtedly the stored up labour of all those workers who contributed in any degree and at any stage to their production. Every tool or instrument or any form of material help can be looked at from this point of view. A carpenter may neglect this view and regard his plane as a tool and nothing more, for which he has paid in cash. A farmer may likewise fail to realize that in ploughing his field he is being helped by the village carpenter who got the plough ready. But in fact he can be imagined to be ploughing the field not with the plough, but with the carpenter's skilful labour which was responsible for making the plough itself.

In conclusion it may be said that capital is the crystallised form of labour which has been spent upon land.

**Forms of Capital.** Savings are used either for direct satisfaction of wants in future, or they are devoted to some purpose with the intention of earning an income. The portion that is used for productive purposes takes the form of raw material like seed in agriculture; cotton, wool and silk in textiles; and iron, brass, copper etc. in metallic in-

dustries; or it takes the form of tools and instruments needed at different stages in any act of production, like ploughs and tractors, spindles and looms, hammer and anvil; or the form of sheds and buildings in which actual production takes place. All such things are different forms of *production capital*.

The portion of savings that is consumed may be used either as consumption wealth or consumption capital. If it is consumed as a means of direct satisfaction of wants or treated as a source of pleasure and enjoyment alone, it is consumption wealth. But if it is consumed with a view to keep up one's health and vigour or efficiency as a producer, it becomes consumption capital. All that an idle rich man consumes from day to day is consumption wealth; all that a farmer, a factory labourer or any other producer consumes is mainly to avoid the loss of his health and efficiency and is therefore consumption capital. It is capital in the sense that it is a maintenance charge for labour or human factor of production in as much as the money spent in buying and maintaining tools and instrument is capital.

The distinction between production capital and consumption capital lies not in any real difference

in their nature as capital, but in the way they are used for productive purposes. An employer's money used in payment for work of the employees and utilized by them in consumption is really productive in the same sense as his money spent in buying tools and instruments with which the employees work. The difference lies in the fact that while money paid to labourers is productive through their consumption of it, appliances are directly productive, without going through the process of a similar act of consumption.

**Fixed and Circulating Capital.** In a cotton mill there is coal used in generating steam that runs the entire machinery. Then there is cotton, and also cleaning, carding, spinning, weaving, bleaching, dyeing and other machines that change it into cloth. All these are instances of production capital. Cotton is such as changes its form from one process to another. Though remaining cotton all the time it becomes by turns carded spools, yarn, warp and woof and cloth etc. Yarn as yarn can be used for weaving only once: it cannot render the same kind of service twice. Coal that is used in heating the engine exhausts its utility in rendering that service only once. Such forms of capital like cotton and coal are called circulating capital. *Cir-*

*culating capital renders service only once* and includes not only raw materials, and half or partly finished products but also finished goods which have not yet been sold to the consumer.

But the engine can generate steam and run the machines day after day, and so can a spinning mule spin months after months. Such *capital goods that render the same kind of service over and over again are called fixed capital.*

The same capital goods can be both fixed and circulating capital. If an engine has been planted in a factory where it runs the machines day after day, it is fixed capital. But in the iron works where it was made, not to be used there for running machines but to be sold away as a finished commodity, it was only a form of circulating capital. In spite of its being bulky and heavy and more costly than a yard of cotton cloth, there is no difference in the manner in which they serve in an act of production.

There are certain kinds of fixed capital such as belts for turning machinery, bicycle tires etc. which are renewed almost as rapidly as circulating capital. But there are other kinds of it such as permanent improvement in land which are practically never renewed.

Nearly all the capital of a banker or merchant, except his buildings is circulating capital. Nearly all the capital in a railway is fixed capital.

The following chart will be found useful in distinguishing one form of capital from another:

## FIXED CAPITAL

P R O D U C T I O N	Engine, Spinning	Bicycle, Shoes,	C O N S U M P T I O N
	mule, Railways,	Clothing, Furniture,	
	Factory Buildings.	Dwelling houses.	
C A P I T A L	Coal, Yarn, Cotton,	Food, Firewood,	C A P I T A L
	Seed and other raw materials.	Wheat for bread.	

## CIRCULATING CAPITAL

Dwelling houses are both fixed capital and consumption capital; food is both circulating capital and consumption capital; seed is both circulating capital and production capital; and an engine is both production capital and fixed capital.

**Working Capital.** Though capital employed in a business is in the form of fixed and circulating capital, it is more convenient to express its quantity or value in terms of money. Rather than make a list of the number and quantity of each kind of raw material and machines it is better to express their money value and say that the capital employed in a factory is, suppose, Rs. 1,00,000. By working capital is meant this money value of capital goods. The firms or businesses that employ huge amounts of working capital are termed as capitalistic concerns.

**Functions of Capital.** Whether capital is used up slowly or rapidly, it is meant for being consumed. It is an aid to labour and performs its function of assisting labour in various ways. In the form of seed, it helps in the growth of crops; in the form of food it helps in maintaining the working efficiency of labour; and in the form of clothing and shelter it helps in preventing the deterioration of his production capacity. Now-a-days when production has to be speedy, accurate and automatic, man's greatest need is some mechanical appliance which will ensure these results and also relieve him of drudgery, fatigue and over-exertion. Capital in the form of improved and delicate ma-

chinery is meeting this need of man. Canals and railways are further assisting him in the transportation of goods. As a means of economy of labour it may be said that no machine economises labour like money.

**Growing importance of capital.** In primitive days there was practically no capital whatever. Men went into a forest and picked wild fruits. It began to make its appearance as soon as they needed something to carry the fruits. Its importance gradually increased, as society progressed. In its primitive stage, agriculture hardly required any capital but now in its advanced stage, a good deal of capital is needed. For instance the capital of an agriculturist consists of his cattle, tools and implements, farm houses, wells, water-lifting arrangements; seed and manure. Different industries use different kinds of capital. A small artisan's capital includes small quantity of raw materials, his small tools and implements, substances which he uses for his industrial operations, and an open or closed space where he carries on his art or craft. A manufacturer's capital includes his buildings, plant and machinery; his raw materials, his stocks of commodities and many fittings and fixtures. There are other more organised forms of



capitalistic wealth such as railways, roads, canals, bridges, yards and public buildings which are immensely increasing the productive capacity of land and labour. Thus capital to-day is the most important requirement of productive efforts, because its use is largely increased with the growth of industries.

**Distinctive features of land, labour and capital.** All forms of wealth need for their production land, labour and capital. In the Nomadic ages of man land (nature) was the prime factor; in the Pastoral and Agricultural ages labour was the chief factor which worked in conjunction with land; in the Industrial age, capital rose into prominence and the other two, land and labour, became comparatively less important.

**Land and Labour.** Of these two, land is more important and necessary, for nothing at all can be produced without it. A man must have land to stand upon and work. His factory must stand upon land, as it cannot hang in the mid-air. For agriculture, mining and quarrying, land is essential. The geographical position, climate, richness of the soil and the mines, and facilities of transport and communications as provided by nature, all these have great influence in determining

the economic activity and the prosperity of a nation. In modern industries the importance of water-power, a valuable gift of nature, has become great. The animals with the raw materials like flesh, horns, hides and skins that we get from them, are a gift of nature. All these advantages which man enjoys are due to land; hence land is a primary factor of production and must come first on the list of factors that co-operate in the production of wealth.

Land by itself can produce many things, but even in rich spots the labour of man is necessary to wrest the fruits of the earth from her hands. For instance, fruits must be picked, roots dug, fuel collected, fish caught and game trapped. Thus land is a sleeping partner and is worked upon by labour which is an active partner. Sometimes land does not yield rich returns to human labour and has to be forced to give up its treasures for our enjoyment. In any case the gifts of nature that are scattered over the entire surface of the earth have to be arranged and developed by human labour before they are in a fit condition to satisfy the needs of human beings.

According to the requirements of productive effort the supply of labour can be increased, but

the supply of land is limited and cannot be increased even at a great cost. The total surface of the earth is limited and cannot be varied. Land is sometimes said to be produced in the sense that it is thrown open for the use of man. When swamps are filled in or hill-sides cut into terraces or forests cleared, land is simply changed from a waste to a productive land, but no new land is created.

The quantity of natural resources or land is, therefore, fixed. No matter what be the need of a cultivator, the amount of rain and sunshine that his plot is receiving is fixed; the miner may do his best to increase the stock of the ores deposited in the mines but he will fail. A mine or fishery or a hunting ground can supply only a limited quantity of the ore, the fish or the game that already exists there.

**Land and Capital.** Land is the gift of nature. No human labour was needed to produce it. No cost was borne by any human being to bring it into existence. It has been given to the society as a present from Nature. But the entire quantity of land has been appropriated and if any individual wants to acquire any plot of land now, he has to pay, or labour for it. To an individual it has a cost, and usually a great cost in the old coun-

tries and in the crowded towns. Capital being a form of wealth, it has a cost of production. Much effort and sacrifice was borne by men to create the amount of capital that at present exists in the world.

As opposed to land, capital goods wear out; they can also be increased and destroyed. Land does not wear out. This is always true of the area and the situation of land but not of its fertility or of the mineral deposits. Land, therefore, needs no repairs, but capital is being continually renewed.

**Labour and Capital.** The existence of capital is based entirely on labour. As pointed out earlier, capital is only crystallized labour. Without the presence of land and labour, capital cannot exist. Its place in the order of importance among the factors of production comes after land and labour. But capital serves to increase enormously the productive power of both land and labour. Though in big industries of today capital tries to replace labour, yet both of them are essential for efficient production.

Labour needs more frequent repairs than capital. It deteriorates even when it is not used. A labourer must be fed, clothed, and given shelter whether he works or not, whereas capital-goods stand in need of repairs only after they have been

used. Again, if a machine is not worked, it will rust little but will not break, and its power will remain in tact; but if a labourer remains out of employment for any length of time, he loses his efficiency.

Money invested in labour such as in acquiring education or training cannot be withdrawn and put to other uses, but if money is invested in a factory or a machine it can be withdrawn and applied in any other industry. Labourers usually do not like and cannot afford to change their occupation frequently and easily; capital, on the other hand, can be transferred to any part of the world easily and quickly, and changed from employment in one industry to another without much difficulty.

### EXERCISES

1. Define "Capital". Consider the part it plays in production. Is land included in the term "Capital"? Explain your answer. When a man owns land and money, can it be said that he possesses no capital?
2. Distinguish capital from wealth and show that it does not fulfil its function unless it is consumed. Does hoarded wealth add to the capital of a country?
3. 'Capital possesses both productivity and prospectivity.' Discuss.

Mention the main forms in which capital exists and distinguish one form from another.

4. Comment on the following:

"God sells us all good things at the price of our labour."

Discuss the relation of capital to money.

5. Define capital and distinguish between fixed and circulating capital.

Do you consider the following as capital?

Seed, goodwill of a business, the intellect of a teacher, the skill of a doctor, the miser's wealth, a house.

6. Explain as clearly as you can—

'Capital is used to produce further wealth'.

'Income is derived from capital; it is a stream of wealth, and is constantly being converted into capital.'

7. Discuss the following definitions of capital:

(a) 'Whatever gives income is capital.'

(b) 'Capital means all that wealth which is neither land nor labour nor goods ready for consumption.'

8. Comment on the following statements:

(a) Without labour no capital can be either produced or can itself produce anything whatsoever.

(b) 'All money is wealth, but not all money is

capital. Again, all capital is wealth, but not all wealth is capital.'

9. Is capital or labour more important in the production of wealth? Is capital not a tool in the hand of labour?

What comment will you offer for the following statement?

'No man alive today can support himself by his labour alone, without capital to arm him with tools and provide him with raw materials.'

10. Estimate the importance of capital in production.

Do you agree with the following statement?

'The third agent may indeed be a secondary partner in one sense, but none the less an essential one.'

How does capital compare with land in the act of producing wealth?

11. How far do labour and capital resemble, and how far do they differ from each other in the work they do?

Do you think that the so-called death-struggle between them can only end in mutual destruction, for neither capital nor labour can long survive the other?

12. 'How could the workers be supported during the periods (often a long one) which elapses before their product can be marketed, unless there be capital to pay

wages in the meantime?' Does this not lead us to conclude that capital is more important than labour?

13. Why is land not abolished when it is only a sleeping partner? Can the work of production not proceed with labour and capital alone?

14. Is there any distinction between capital and capital goods? Do you think that economic progress consists in the accumulation of capital and the increasing use of capital in production?

15. What are the characteristics which distinguish land from labour and capital? Are they the source of any trouble to society like the conflict between labour and capital?

16. Who is more desirable from the point of view of social welfare, a careless spender or a wise investor? And why?

Is there any essential difference between the miser and the spend-thrift? If so, what? Which is worth more to society?

17. Comment on the following statement:

'In any country, when its production exceeds its consumption, the result is economic progress; but when consumption exceeds production, the result is economic retrogression.'



## Chapter IV

### REQUIREMENTS OF PRODUCTIVE EFFORT (*Contd.*)

**Organization and Enterprize.** It has been pointed out that for efficient production capital is also a necessary requirement in addition to the two original factors, land and labour. Howsoever small a business, these three factors are sure to be employed there. A neighbouring carpenter is seen hiring one of the municipal shops. He buys planks, nails and screws, paint and varnish in the local market. He engages a young man to do odds and ends in his shop and to help him all day long. He has got a set of tools that are required in making the tables in which he specializes. He himself works hard in his shop and usually earns a decent living. To him, the shop is land; planks, nails, varnish and other stuff circulating capital and tools fixed capital, and the services of the young man and his personal effort, labour.

On looking a bit more closely a difference is noticed in the type of labour which the young man is doing and that done by the carpenter himself. The young man works as directed by the carpenter

who decides the plan of his work. His interest lies in working for a few hours under the carpenter's guidance and earn his monthly wage. The task of the carpenter is not so simple. His interest and responsibilities in the business are much greater. He studies the taste of the people for a design of tables he is going to make, decides how many of them have to be made in a week or a month and looks for the shop where he can get the necessary raw material at the lowest prices. It is for him to calculate if one youngman be employed or more; whether he needs any new tool to improve the quality of the tables and what price he should charge for them. He considers the price which other carpenters are charging for the same kind of tables, also whether he is in a position to sell at the same price with a decent profit. He watches every change in fashion and style so far as they affect his business and tries to meet the changing requirements. In short, he controls and directs the entire business. All these activities that he undertakes, in addition to actually making the tables, are his activities of organization.

**Need of Organisation.** Just as land and labour can achieve little without capital, so do all the three working together unless they are in effective cooperation. An agency is required to coordinate

their functions and to develop them to the best advantage. Even under elementary conditions, some degree of organisation is essential. The peasant proprietor, who owns his land and his tools and cultivates with his labour and that of his family, needs organising ability to get the best results. Possibly he has to see that the various factors are combined in the right proportion and at the right time; that the work in the fields is done in appropriate order; that each worker possesses the necessary amount of capital to work with; and that each is given a fair proportion of work to do in order that it may not overlap that of others. Except in such a rare case as this, the various factors of production are generally not found in one pair of hands. One man may own land but possess no capital or be incapable of doing work. Another may have capital but own no land or possess insufficient power to work; while a third may possess neither land nor capital, but a strong body or skilful hands or sharp intellect. Some one is required who will bring them together and combine them in such happy proportions that the maximum of wealth may be produced at the minimum of outlay. To the man who performs this valuable service the economist gives the name of organiser or business manager. Conditions now

have changed considerably. In modern industry raw materials may come even from the ends of the earth; workers may be recruited from many districts; while most of the capital may flow in from numerous investors belonging to every grade of society; yet the organiser stands behind them all. To him must assemble the three factors of production; to him must all look for supervision, direction and control; to him must be entrusted the onerous and important task of combining them in a proportion that will yield the maximum of output with the minimum of outlay.

In short, the strength of land, labour and capital lies in their union under one management, which will take the lead in coordinating them to produce wealth and also endeavour to obtain from them the best results.

**Importance of Organization.** The importance of organization is increasing along with the development in modern industrial production. In early stages of economic life, when people had few wants and satisfied them with personal labour and crude capital, there was little scope for organizing ability. The raw material necessary for making the finished commodity was produced by the individual who also knew exactly how much of a

thing he wanted. Fashion had little influence on individual consumption which was dictated by custom and varied little over long periods. The tools and instruments used were locally made and the co-ordination between a few simple tools and family labour was not difficult to bring about. Those people, who produced more articles than they could consume, sold away the surplus in the village or at a fair in the neighbourhood.

Since those days the nature of production has undergone vast changes. Though there are individual producers, yet even they do not confine their productive activity to the satisfaction of their personal wants. Usually they produce what others desire and others produce the article they themselves want. The necessity of clearly knowing the quantity and quality of the articles that will find purchasers is great. The same article is being produced by numerous people at different places. To know at what price they will be selling the article is essential to a producer. Due to means of cheap and quick transport it is possible for a producer to satisfy the wants of consumers living at distant places. These wants may change and do change much more quickly than they used to do in former times. Custom is giving place to fashion which is

much more variable. Even in actual production of the article vast capital and hosts of labourers are employed. It makes the task of the organizer much more difficult. To find out which man is best fitted to particular task; to assign him that task and make him do most of it; to be in the lookout for the sources of supply of raw materials at a cheaper price; to carry on experiments with a view to introduce a new process in place of the old one; to adopt the best and most up-to-date machines in order to increase production; to employ canvassers and agents and to advertise to push the sale of the finished commodity; all these and allied functions are undertaken by organisers who must be efficient in them if they desire to prosper in their business. This need for efficient organization was never felt as urgently as under the modern conditions of production. Only one in a thousand men is gifted with the ability, spirit and power to work as an efficient organizer. First-class powers of organisation are amongst the rarest of human gifts.

**Enterprise.** The need for efficient organization is great but all the organisers are not equally efficient or successful. There are some who possess the necessary training, inclination and aptitude and they succeed. Others, less fortunate ones, lack

these qualifications and ill-manage the whole affair. The reward for the successful ones is rich gain; the punishment for the inefficient ones is heavy loss.

Every businessman, who undertakes a productive activity, has to make a choice of the place, the article, and the scale on which the article is to be produced. He has to estimate the quantity of the article produced by others and the probable consumption of it. He has to see whether in addition to the present extent of the market new areas can be served. He makes an estimate of all the expenditure he will incur in producing the commodity and the price he will be getting for it. But all these are only estimates, the attempts to forecast or to foresee what trend the events will take in future. And he may fail in this forecast. Even if he succeeds in fully understanding the present circumstances, he may commit mistakes in forecasting the change in taste and fashion, in the price he will have to pay for raw material, and in the improvement in the means of transport that may open new markets for his goods or face him with competition from unexpected quarters. All these conditions will affect his expenses and the price that he will realize by selling the article. He may succeed in clearing big profits or may suffer heavy losses. This element of

risk is involved in every business. In some it is less, and in others it is more. But as long as production is carried on for others and for distant places, this uncertainty must remain. This uncertainty in business involves the risk or enterprise, and he who undertakes the risk or the liability to make gains or suffer losses is called the enterpriser or entrepreneur.

Enterprise has all along been a necessary factor of production. Unless producers are willing to expose themselves to unforeseen circumstances over which they cannot possibly have control, they cannot undertake the production of any commodity. The world must be the poorer by the loss of many enterprises which might have proved to be of great benefit to it, if every man were deterred by the uncertainty of future course of events to run the risk of starting those enterprises. In modern industrial production the need for enterprise is great and it will grow still more as trade and commerce become more and more world-wide. The element of risk involved in businesses has become so great that it is regarded as a special responsibility which all and sundry cannot undertake. It has come to be a contribution made by a class of people who



make it their special business. These people are capitalists.

None can take risk unless he has some capital at stake. Labourers who work for a period and get their wages risk nothing in case a business fails. Even the high class labourers, who manage the actual production of the finished article, are specialists in management alone. They receive a fixed payment and have no further interest in the prosperity or loss of the business. It is the capitalists who employ huge amount of capital, that bear the real burden of loss or appropriate rich gains. They risk their capital and consequently undertake enterprise. Due to this specialization between the efficiency of actually turning the raw material into finished commodity involving the coordination between land, labour and capital on one hand, and the special responsibility of enterprise on the other, the functions of management and enterprise that were once combined in one organiser have become independent ones. They are now two different factors of production supplied by two sets of people.

#### **Double function of the entrepreneur.**

The function of a modern enterpriser is two-fold. He is the captain of industry and also the great pay master. As the captain of industry, he

backs his brain, his luck and judgment, and undertakes the risk. As the great pay master, he distributes remuneration to each factor of production. To the owner of the land he pays rent; to the capitalist interest; to the managers and clerks salaries; and to the huge army of labourers wages; and in the last, though not in the least, whatever is left goes to make up his profit for the risk which he shoulders, for he cannot be expected to apply his energies and abilities for nothing.

The consideration of the distribution of remuneration to the factors of production is postponed until Distribution under which it will be fully treated.

### EXERCISES

1. What is meant by organisation? Explain the statement: 'land, labour and capital working alone can do little. In their union is strength.'

Who brings them into effective cooperation? Enumerate his duties.

2. Why does the necessity of an organiser at all arise? Is the captain of industry master of his situation?

3. Estimate the importance of organisation in production. Examine the truth of the following statement:

'Only one man in a thousand has the ability, spirit and power to direct an army of men with a variety of interests through a maze of difficulties'.

4. What are the functions of an entrepreneur in modern industry? Discuss the following:

'Planning ahead and working for the future were never so important as they are now'.

5. Is it correct, from the economic point of view, to describe capital and labour as rivals? Comment on the following:

'Since the main function of the entrepreneur is to bring labour and capital together, it is essential that he should possess the ability of inspiring confidence in them'.

What for is this power to inspire confidence required? Why does the same necessity not arise in the case of land?

6. Do you not think that the work of organisation is only a special form of labour? If not, why not? Will you choose to class management as a special kind of labour and enterprise as something more than that which entitles it to be grouped in a separate category?

7. 'To him flow land, labour and capital for employment; from him proceed the rewards which these agents respectively receive called rent, wages and interest'.

Does this justify the claim that the functions of the entrepreneur should be regarded as a factor in production?

8. What are the duties of an organiser? Consider the following, and then formulate the qualities which go to make an ideal entrepreneur.

(a) 'It falls to the undertaker to correlate the various factors, to set them in motion, to get them to work harmoniously to the best advantage, and to remunerate them satisfactorily'.

(b) 'After the product is complete, he must make arrangements for its marketing and sale'.

(c) 'To be successful the organiser should possess foresight, judgment and enterprise'.

9. 'A feature of modern industry is that most production is instituted long before the product is marketed. The organiser lays his plans and sets to work months, or even years before he is in a position to satisfy the anticipated demand'. What light does this throw on the qualities which the organiser should possess?

10. Explain as fully as you can.

'Enterprise acts on the other factors as a magnet does on iron filings within its field; it organises them

and forms them into production units. The entrepreneur is the link between the unorganised factors of production—raw materials, steam power, man power and so on—on the one hand, and the mass of unorganised consumers on the other’.

## Chapter V

### EFFICIENCY OF THE FACTORS OF PRODUCTION

Productive efficiency of a factor of production depends on the contribution it makes to the joint output of wealth. Its efficiency is high or low according to the amount of wealth that can be attributed to it. If a plot of land that receives a certain number of ploughings, waterings and other care, yields greater amount of grain than what another plot of land of equal area yields on receiving the same attention, it is said to have greater efficiency in production as compared to the other. Similarly, if of two labourers working with the same quality and quantity of raw material and tools, one produces more than the other, the former is regarded as more efficient than the latter. Similar argument holds good in case of the productive efficiency of capital goods.

**Efficiency of one factor depends on the efficiency of other factors with which it is combined in production.** If of the three factors, land, labour and capital, one is comparative-

ly less efficient, it will bring down the efficiency of other factors. Highly skilled labour and most up-to-date machines employed on a poor quality land will not produce as much as when employed on a superior quality land. 'A bad workman quarrels with his tools' is a well-known proverb; but a bad tool also hinders rather than improves the efficiency of labour or land. In order that the efficiency of one factor may be at a high level, the other factors, with which it is going to be combined, should be of a highly efficient nature. The efficient combination of factors is the work of efficient organiser. Thus it is clear that efficiency of the factors depends upon the efficient organization. Good organization increases the efficiency of all the factors of production, while the result of indifferent or poor organization is low efficiency of the factors.

Efficiency of land used for agricultural purposes depends on its productivity which is affected by the fertility of the soil, climatic conditions and its situation. Fertility of the soil is to some extent the result of natural phenomena like heat and light, wind and water, and to a great extent the result of human effort. The Gangetic basin is fertile, as it has been naturally formed of the silt

brought by the Ganges and its tributaries; the black cotton soil is fertile, as it is the natural gift of volcanoes; and the greater part of Rajputana is infertile as it has once been the sandy bed of a great inland sea and is rainless now. The fertility of the soil as directly affected by nature is improved by the skill of the cultivator, the methods he uses in the art of cultivation, the facilities of artificial irrigation and the means of transport. Scientific cultivation such as the one practised through rotation of crops, double-cropping, dry farming and two-storey farming extracts greater produce from soil while a defective system of cultivation turns a fertile land into a barren one. The choice of the crops raised makes tremendous difference. A land, that hardly pays if used for wheat production, can be made to pay if used for raising millets for the growth of which it is more fitted. Rotation of crops keeps the quality of land from deteriorating. Dry-farming consists in cultivating the land with as little water as possible. Two-storey farming which is usually met with in the tea-gardens of India consists in growing the tree crops with ground crops underneath, provided there is plenty of sunlight, soil-moisture and other elements of plant growth.



In addition to these, there are many other ways in which human beings have succeeded in improving the fertility of the soil. Land full of trees and bushes have been cleared; too marshy tracts have been drained; too salty land flushed; and too arid land irrigated. Above all, roads and railways, steamships and air transport have brought too remote lands much nearer home and markets, and have thus increased their efficiency. The nearer a parcel of land is to a market, the greater is its productive value, because less labour and power are needed to take its produce to the market. The labourer also finds it very convenient to come to work and go back. His money and time are saved and his efficiency is increased.

Efficiency of land used for residential and commercial purposes depends on the economy with which it is used. In big towns and cities, specially those that are growing due to rapid growth of industries, land has come to acquire very high value. It is scarce, and to make the best use of it strict economy is observed in its utilization. In congested areas tall buildings have been erected on a certain plot of land to increase the floor area. The sky-scrapers of New York reaching well above 1,200 ft. from the road level

are very prominent testimony to the efforts man has made in the economy of land. Even in much smaller towns the ground floor of a house is used as an office or a shop while the upper storey for residential purposes. It is the result of economy in the use of land that has led to the construction of hanging railways of Berlin and underground railways of Paris and London. When the surface roads could not meet the needs of unusually heavy traffic and also could not be widened or increased in number due to scarcity of land, such means were devised to overcome the difficulty.

**Efficiency of capital.** Capital by itself cannot produce, as it is lifeless. It is used either as a raw material which is to be changed into the finished commodity or as tools with which labourers work in production. Much depends on how a tool is being used. And to be of good use, a tool itself should be suitable to the purpose in hand. Thus the efficiency of capital is a question of its *suitability* and *proper use* by efficient labour.

If a workman knows his job and has been trained in handling delicate and costly machines, he will make the best use of them, at the same time avoiding breakage or excessive wear. But a

bad workman will sooner do some damage to the machine and possibly to his person. It is proverbially true that a bad workman quarrels with his tools. Much waste of raw material, damage to machines and loss of time may follow an inefficient use of a costly machine working on a valuable raw material. A little oversight, slackness or mistake in timing in an iron or saw mill, where huge and sharp instruments are employed, may mean spoiling of the metal or wood or maiming of the worker. The danger to the machines is likely to be great in modern times when scientific development comes to aid the invention of very efficient yet very delicate machines. Great care is needed in handling a balance that weighs upto a thousandth of a gram; a scale that measures a thousandth of an inch or a microscope that magnifies an object millions of times. The efficient use of these tools and instruments depends upon the efficiency of labour with which they are combined.

A poor and out-of-date machine, likewise, is a hindrance to the productive efficiency of the worker. In order to help and speed up production, machines must be of *good quality* and *suited to the purpose*. A blunt knife will not

serve so well as a sharp one; also a sharp sword will be a poor substitute for a screw-driver. Moreover, it is more economical to use a costlier machine with comparatively a greater efficient working in place of a cheap and old-fashioned one that is cheap in the beginning but costly in the end.

Strict economy is needed in the use of raw material. In the first case no leakage or waste should be permitted though insignificant it may look in the beginning. But if waste is unavoidable as resulting from cutting, shredding, cleaning and other ways the waste should be utilized in bye-products. Waste cotton in a cotton mill is generally turned into yarn for rough durries; the shreds of wool in an woollen mill are used in making felt articles; the molasses of sugar mills is turned into spirits; and ashes from the engine room utilized in buildings.

### EXERCISES

1. Define 'efficiency'. How does the employer contribute to the efficiency of the factors of production?
2. Explain how the efficiency of land depends upon its fertility and location. In what way can

science affect fertility and location to increase the productivity of land?

3. Why is India so poor in spite of the fact that her natural resources are very great?

4. 'When we speak of the productivity of capital, we mean the joint productivity of capital and labour'. Explain.

'When capital is put in the service of labour, it increases the productivity of labour to a large extent'. But what about the productivity of capital itself? Is it decreased because it helps to increase the efficiency of labour?

5. 'Land and capital are inert. They by themselves cannot produce anything. They are merely the instruments for increasing the efficiency of labour'.

How far do you agree with this statement?

6. Consider in terms of efficiency whether land and intelligence both should be included in the term 'capital'.

7. What are the different methods in use for increasing the efficiency of urban and rural land? Mention a few cases from Indian conditions which you know of, to illustrate your answer.

8. What is meant by the efficiency of 'capital'? How is it increased?

## Chapter VI

### EFFICIENCY OF THE FACTORS OF PRODUCTION (*Contd.*)

#### LABOUR AND ORGANISATION

Labourers are roughly divided into classes, skilled and unskilled labourers. When a labourer is called unskilled or inefficient, it is not meant that he is good for nothing; it means that at a particular task he is not as good as he is expected to be, or that there are workers who are more skilled at his job than this particular individual. An unskilled weaver can weave, but not so well and as quickly as another who is more skilled in weaving. Both working for the same number of hours and with the same kind of raw material and tools, the unskilled one will produce a fewer yards of cloth than the skilled one will do. It means, therefore, that an unskilled worker is not absolutely worthless but is less efficient than the so-called skilled worker.

This does not imply that there is no average or standard worker on whose comparison it may be decided whether a worker is skilled or not. By observing a large number of labourers working

under the same set of conditions, a certain amount of work of a quality can be fixed as the standard work. If a labourer comes up to this standard, he will pass as a skilled or efficient worker, and if he fails to accomplish the standard work, he will be called unskilled.

### EFFICIENCY OF LABOUR

The power of a labourer to create wealth is the question of his personal efficiency as much as that of the help he gets from other factors in any productive activity. His personal effort needs be supplemented by the efforts of the organizer under whom the labourer works, as it is the organizer who looks to the supply of other factors of production in co-ordination with which the labourer works in modern industrial production. Thus the question of the efficiency of labour resolves itself into two: To what extent does a labourer's efficiency depend on his personal efforts and qualifications? And, to what extent is he assisted by the contribution of the employer?

**Personal efficiency.** *Health* is the basis of all activity. People who enjoy sound health and live long, put in more work in the long run than those whose span of life is short and even then

is interrupted by periods of disease and illness. To estimate the total amount of wealth produced by a worker it is necessary to consider not only the amount he produces in an hour or a day but also for how many days in a year and how many years in his life-time he keeps fit to maintain his speed. A labourer who begins wealth production at the age of twenty and keeps quite fit and working till he is fifty-five, has more chances to produce than the one who either dies earlier or leads a sickly life for a large number of years.

Healthfulness depends upon the constitution that one inherits from his parents and also upon his upbringing in child-hood. In youth and manhood it becomes the concern of the workers themselves to maintain and improve their health. If they lead a moderate life without giving themselves up to vices, they keep good health; but if they indulge in excesses, their health is impaired. Nourishing food suitable to the nature of work a labourer has to perform, and regular exercise go a long way towards keeping a sound body. Family life, social customs, and one's company exercise their influence on his health. Lastly comes the climate of the place and the surroundings of the factory or workshop where the worker



works. A cold climate makes a person healthy and active, but a very cold one is enervating and makes out-door work impossible. A warm climate is not necessarily unfavourable to hard work, but it creates an inclination to be lazy and sedentary. Temperate climate is the most conducive to hard work and takes out the best efforts of a labourer. Again, the healthy surroundings of the place of work and the neat and clean interior of the factory or workshop keep a labourer healthy and cheerful while a dark and ill-ventilated place of work is injurious to the health and vigour of the labourer. Less noise produced in a factory and the bright, pleasing and soothing paints on the walls of it also increase the productivity of the worker.

Closely related to body is the mind of a man. In modern times mind is more important than body. Every work requires both physical and mental effort. Intellectual vigour is largely the result of education. By education is meant not only the school courses a child has to study but all the experience which he is able to gather from any source whatever. Any activity that quickens his power of observation, sharpens his wits, refines his imagination and helps him to form accurate

judgment can be called intellectual training. This is received in the family, in the school, and the wide world where a demand is made on one's mental faculties to cope with situations arising almost every moment in one's life. This education gives only a general training in developing mental faculties and is not intended to fit a man for a particular job which requires a special kind of training called technical training. In ancient times, the rigid occupational caste-system helped a good deal in enabling the son to be specially adapt in the trade of his father. Heredity then caused a kind of natural diffusion of technical knowledge. But the case is different under new industrial conditions.

Technical education or training in a special line of activity has acquired a great importance in modern industry. This is an age of specialization where a labourer works at a single process and that too a minute one. Though the process is a minute one, the raw material passing through his hands is often costly, and the implements, with which he works, delicate. There is a particular way of doing that process and a layman, however intelligent, will not succeed in properly doing it, unless he has been specially trained for it. Then

there are ins and outs of an occupation and secrets of a trade which one does not learn through general education but through long periods of apprenticeship with those who are experts in their line.

Good moral character is another factor which determines the efficiency of a worker. If a worker enjoys sound health and has received both general education and technical training, he may be expected to be capable of doing his job well. But whether he does it well, will depend on whether he has a character or virtues of self-reliance and self-respect, honesty and industry. A worker, who feels his responsibility in completing his assignment, who works as hard in the absence of his boss as in his presence, and who takes interest in his task because he is paid for that, certainly deserves success and will attain it. It is a question of having a will to do a task when he has the power to do it.

Thus sound health, good education, proper technical training and a fine character go to make an efficient worker. In addition to these, there are certain conditions of work, mental out-look, ambitions, want of restraint and variety in life which are very favourably conducive to the

growth of productive efficiency.

Hopefulness for rise in the grade and pay, for extra remuneration on doing excellent work, and for growth of self-respect and social ambitions, adds zest to one's work. Freedom from narrowing influence of customs and prejudices and from the oppressing sense of inferiority and subordination, induces a man to work harder and better than what he will do if he is mistrusted and constantly driven to work against his will. It has been abundantly realised that a man, who realises his responsibility, is a better worker than a slave who has no personal interest in the task. Change in associations and surroundings, in life and work, keeps a man cheerful and buoyant in spirits. Dullness and monotony of life often kill initiative and enterprise, and blunt the creative power and imagination without which a worker is no better than a lifeless machine.

#### EFFICIENCY OF ORGANISATION

Efficiency of organisation is judged by the final results of production. The ideal of production is the creation of the maximum wealth at the minimum of effort. Thus an organisation that manages business with a grater approach to this

economy of effort is more efficient than another which cannot affect so much economy. This economy of effort depends on the efficiency of land, capital and labour and the way they are combined together to some consequence. To labour, land and capital are subordinated in production and therefore it can be said that the efficiency of organisation depends on the degree to which it succeeds in utilizing and increasing the efficiency of labour.

**Internal and External economies.** An organizer can improve the efficiency of production by taking advantage of economies that are possible in the process of changing raw material into finished commodity and economies that result from the general development of an industry taken as a whole. The first group of economies are called internal economies and they consist of the economies of division of labour, of large-scale production, of buying and selling, and every other step that can be taken by an organiser to improve the quality and increase the sale of the products. They depend entirely on the skill and resourcefulness of the individual organiser and are confined to the unit of production under one management.

The other group of economies are called external economies which individual firms can enjoy if they are concentrated in a particular locality. Employment of specialized machinery on cooperative lines, production of power on a big scale and its utilization by member-firms situated in a locality, organisation of collective buying and collective advertisement and sale, starting of common departments of repairs, printing and packing that serve several firms doing one kind of business. These and other external economies result from the localization of an industry.

The internal economies, that an individual establishment can arrange for itself, are generally very small as compared to the external economies that result from the progressive development of industry in general. Due to extension in markets, supply of raw material from distant areas, employment of costly machines and high salaried experts, expensive nature of advertisement and canvassing, the external economies are getting more and more prominent and small individual firms feel themselves compelled to resort to these in their desire to survive the competition of big firms. What they cannot severally do, they make up by way of external economies.

## EXERCISES

1. Can you compare the efficiency of a *balwa* with that of a carpenter? If not, why not? Who is more skilled, a dentist or a lumberman? Is goldsmith a skilled labourer and cobbler an unskilled one?
2. Is there no standard by which to judge whether a labourer ought to be classed as skilled or unskilled? Discuss the desirability of such a standard? Mention from your own experience a few illustrations where standard has been the deciding factor in your actions. Don't you go in for standardised articles at the time of making your purchases of scientific instruments like thermometers and others? What sort of standard for the measurement of labour efficiency would you choose to propose?
3. Does there exist any standard for measuring labour efficiency which suits all occupations and climates? Can you say that a factory-hand in India is less efficient than a factory-hand in England? In what way has the introduction of machinery facilitated the task of establishing a standard?
4. 'The Indian factory operative is comparatively uneducated and unskilled at his work; he is deficient in application and is fond of change, preferring to wander from mill to mill rather than to remain

settled; he works leisurely throughout and takes intervals of rest whenever he feels disinclined for further exertion; he is wasteful and careless in his methods, with the result that machinery is frequently damaged through want of cleanliness and proper care; and furthermore, he has no desire to improve his out-put or to enhance his skill'.

How far are these allegations correct?

5. What general conclusions with regard to the factors determining efficiency can you draw from the following?

- (a) A man is more efficient than a woman and a woman more efficient than a child. But in certain occupations child is more skilled than a woman and a woman more skilled than a man.
- (b) In all arts and crafts the Muslim is more clever than the Hindu, but the Hindu makes a better civil engineer than the Muslim. Even among the Hindus, a Kayastha is any day better as a clerk than as a businessman for which a Vaishya is most fitted.
- (c) The son of a carpenter turns out to be a better carpenter than the son of any other caste or class.



6. 'It has been recognised on all hands that an Indian cultivator is in no way inferior to his fellow cultivator in any other country. But he has to live under the rigours of hot climate and long spells of enforced idleness. He is half-fed, poorly clothed and insufficiently sheltered'.

Explain on what grounds it is maintained that an Indian cultivator is at least as efficient as any other cultivator.

7. Explain as fully as you can, giving illustrations wherever necessary, to make your meaning clear.

"The efficiency of labour is a result of physical strength, skill, intelligence, and adaptability, together with such important moral qualities as honesty, and trustworthiness. It is also obvious that the well-fed, well-clothed, well-housed, better educated, and better trained worker is more efficient than the ill-fed, ill-clothed, ill-housed, ill-educated, and ill-trained. The influence of home life, of surroundings, of climate, of earnings, of the duration of work, of family affection, and of outlook and prospects are also important efficiency factors".

8. How does the employer contribute to the efficiency of the employed? Are labourers entirely dependent upon him for their efficiency?

9. How is the efficiency of labour affected by

education (a) of primary school and (b) technical?

On what does the efficiency of labour chiefly depend?

10. 'The difficulties of housing in towns, separation from families, subjection to stricter discipline, and the monotony of work make the labourer seek the earliest opportunity to revert to the freedom of life in the fields'.

How does all this influence the efficiency of a labourer? What remedies would you suggest to improve the above-mentioned state of affairs?

11. How would the following act in inducing the rural population to migrate to the towns and why?

Provision of shorter hours of work, more holidays, better housing, recreation, spread of education, attitude of sympathy, timely salary payments.

12. Explain with suitable illustrations, and show the economic importance of the following statements:

(a) General intelligence is more necessary for skilled labour in modern times while in ancient times skilled labour consisted in manual dexterity.

(b) All work and no play makes Jack a dull boy.

- (c) Freedom is necessary if a man is to work his hardest.
- (d) Men who are hopelessly in debt know that they must turn over every grain of their produce to the money-lender; hence they have no incentive to work.
- (e) The labourer who works simply to please the eye of his master is worse than a trustworthy though an inefficient worker.

13. What is meant by efficiency of organisation?

How does the organiser bring about efficiency in production by internal and external economies?

14. What are internal and external economies? Which of these are more important in modern industry and why?

## Chapter VII

### DIVISION OF LABOUR

The two important characteristics of the present day productive activity are that production has grown much complicated and that group production is taking the place of individual production. In olden days when the end of productive effort was to supply the few simple wants by personal or family labour, production was direct in the sense that it was carried on independently of other individuals or groups of them. It was the stage of self-sufficiency and self-help. But in modern times men usually produce what others want and there too the effort of many individuals or groups is needed before a thing is completely finished. Rather than a single family may grow cotton, spin yarn, weave cloth and tailor it, there are now groups of people busy at each of these processes and sub-processes. Even the task of a cobbler, who did every thing from tanning a hide to turning it into a pair of shoes, has been spilt up into well-nigh a hundred stages, each of which is performed by different persons in a modern shoe

factory. An individual who uses factory-shoes can well be shown that he is being served by all these labourers. The same is applicable to the consumption of almost everything in our daily life.

This splitting up of a task into its sub-processes and the performance of each process by different individuals is called *Division of Labour*.

**Meaning of Division of Labour.** In division of labour, production is essentially undertaken by a group of people. There is no division of labour in the productive effort of the cobbler who himself prepares a pair of shoes from beginning to end though he does it by gradual processes. This is an independent activity and hence no division of labour is possible though there is the partitioning of the entire task into several processes. Likewise, a carpenter's work from the felling of a tree to the finishing of a table does not admit of division of labour if he performs all this labour unassisted by any other individual.

But every group-production is not necessarily a productive activity conducted on division of labour. A dozen men rolling the play-ground with a heavy roller have no division of labour among them; they are all doing the same thing collectively. In other activities of lifting, drag-

ging, pulling or pushing a heavy load, where more men are required as the task is beyond the power of an individual to perform, there is no division of labour as all the members of the group are doing the same thing. For division of labour to take place a task must be divided into several processes and at each process should be engaged different men, not because all the processes cannot be performed by one man but because the task is more efficiently performed if arranged in this manner.

**Forms of Division of Labour.** Division of labour means specialization of work. The simplest form of this specialization is seen in a family where male and female members take up different duties of the household. In agricultural families the males perform outdoor operations on the fields while females keep the home. Even the lads help their parents in doing odd jobs such as looking after the bullocks or watering the fields.

**Occupational Division of Labour.** In society, outside the family, the whole business is kept running by different people specializing in different services required by the community. Some produce the grains to feed it; some weave to clothe it; some build to house it; some make furniture to furnish homes or make tools and ins-

truments needed in agriculture and industry; some train the children to bring them up as worthy citizens; some preach while others heal them. In short, groups of people contribute in their own way towards maintaining the social structure in tact and strengthen it. These various occupations, which were brought into existence in early times by social, religious or political requirements to keep the society prosperous, its moral good, and its safety secure, have since become hereditary and are taken up by successive generations. Though it may be somewhat opposed to the spirit of early times, this occupational division of labour serves to meet the requirements of different members of the society fairly well. Caste-system, looked at from this point of view, has done much good to society, and this sort of occupational caste-system has been in existence in almost all races, not to speak of the Hindus alone.

**Division of Labour into complete processes.** With the progress of society and growth in its economic needs specialization in occupations was carried on still further. A single occupation was broken up into several processes which could be completed in themselves by groups of people working independently of other groups.

The supply of cotton cloth is done in four big stages—growing of cotton, ginning and spinning, weaving, and tailoring—each of which is performed by agriculturists, spinners, weavers and tailors respectively. In making a door plate, complete processes like mining, smelting, rolling and smithery are required; so also lumbering, sawing and actually turning a piece of wood into a table in carpentry. Though each of these processes is composed of numerous sub-processes, they, as complete processes, are performed by different groups who may be even unaware that all of them are putting forth productive efforts that are directed towards making one and the same thing. A miner may refuse to see beyond his nose and assert that as far as *his* job is concerned, it is over as soon as he brings the iron ore from the bottom of the pit to its mouth. He is not wrong. The same claim may be made by labourers working in a foundry, or in a rolling mill or in a workshop. But to satisfy our want for a door plate the efforts of all these people working at complete processes have to be co-ordinated.

**Division of Labour into incomplete processes.** Specialization did not end by breaking up a task into complete processes; it went fur-



ther and the result was that even a complete process was split up into many sub-processes and these came to be taken up by different individuals or groups of producers. The various operations performed by different men in growing cotton are a matter of common knowledge. Each of the processes, ginning, spinning, weaving and tailoring is finished in many sub-processes. In weaving, for example, there is preparing the warp, sizing it, passing the warp through the healding frame, putting it on the loom, filling the shuttle with woof-yarn, and then weaving narrowly so called. In tailoring are included measurement of body, cutting the cloth into pieces, stitching them in parts, sewing, buttoning, ironing and fitting. Similar is the case with ginning and spinning.

Such an increasing separation of a complete industrial function into incomplete processes is also known as technical division of labour. Specialization is carried a long way and within the same establishment. The motive of this kind of division of labour is to split a complete process into a number of very simple movements and thus entrust each of them to experts who have to do one thing and that thing alone all the time.

The basis of this form of division is a careful

study of the workers' capacity to do a certain task with the requisite tools and instruments and under an expert management. A standard or average amount of each kind of work is fixed which a workman of average efficiency is expected to do. And then the business of the employer is to see that each worker does only that job, and nothing else, in doing which he is most efficient and which he does at least upto the standard, if no better.

The constant employment of a labourer in a task is essential to make this division of labour a success. It is indispensable that each man should be constantly employed in a narrow range of task and that task should call forth all the possible skill or energy of the worker. To get the best out of a worker he should be assigned the hardest or the most skilful job he is capable of doing, and he should be induced to do as much of it as he can possibly do without injuring his health by overstraining himself.

A greater degree of perfection of the technical division of labour is seen in the productive processes that are more complex. A simple process does not admit of being broken up into many sub-processes, but a comparatively more complex

job can be reduced into numerous minute sub-processes each of which becomes very simple in itself. Of course, the number of workers should be proportionate to the number of distinct sub-processes, otherwise an individual worker may have to be entrusted with more than one sub-process, a step that will reduce the efficiency of productive effort.

**Territorial Division of Labour.** The extensive development in the means of transport and communication has made possible a form of division of labour determined by geographical conditions of localities. This is known as territorial or geographical division of labour or localization of industries. The soil and climate of Bengal fit it to specialize in jute production and supply the rest of the world with the help of rapid and cheap means of transport. Berar and Gujrat have become the home of cotton-growing due to the presence of black-cotton soil and a suitable climate. East U. P. and North Bihar are the centres of sugar industry. Beyond the shores of India, Australia is fittest for sheep-rearing and Argentina for cattle-rearing; South Africa has specialized in gold-mining and England in coal-mining; Germany is noted for chemicals while France for the

production of luxury articles like scents and wines. The fertility of the soil, favourable climate, presence of mineral wealth, and existence of navigable rivers do more than anything else in determining which locality will specialize in the production of a certain article. The extension of quick and cheap means of transport enables the locality to push on with the industry and easily distribute the article over remote lands.

It is these means of transport that have made some towns the centres of particular industries. Usually an industrial town springs up in the heart of a region that is the home of production of raw material. Ahmedabad in Gujrat and Calcutta in Bengal are the examples. But an industry may be localized far from the province where raw material is available, if the town occupies a central position for the distribution of the finished commodity. Cawnpore is not situated in an area that is noted for cotton-growing or for cattle-rearing; but cotton and raw hides and skins are brought there from distant places to be manufactured, as the place occupies a central position unmatched by any other town at least in the United Provinces, if not in Northern India, for commercial purposes.

**Advantages of Division of Labour.** Spe-

cialization is the foundation of productive efficiency. A man being constantly employed at a small task becomes master of it in course of time. And this is better than having a smattering of knowledge or skill in many tasks. It is not implied that a man cannot be skilful in more than one task; but it is true that if all of his energies are devoted to one of them in which he is comparatively more skilful, he will be able to produce more. By doing the same thing day after day, eyes and hands get accustomed to manipulate the raw material and the tools in a way which becomes almost automatic. And being so reduced, it loses much of its strain on the nerves and muscles of the labourer for whom the task becomes simpler and lighter, however complex and difficult it might have been in the beginning. In other occupations too one can meet specialists. There are specialists in different branches of medical profession, specialists in law and in teaching as in a branch of trade and industry. All these specialists are working on the basis of division of labour, having taken up one particular branch of activity, and they are more skilful in their occupation than those who have not so specialized.

There is a saving of time and its better utili-

zation in division of labour. Time is money in productive activity more than in other spheres of life, and a better use of time is made possible by division of labour which is said to close the pores of the day's work. If a labourer is employed in more than one process, he will do a job for some time, leave it with the raw materials and the tools he has been using there, move to another spot where he has to take up another job for which he requires a new set of materials and tools. This moving away from one job to another involves a waste of time which would be better utilized if the labourer is constantly employed at the same task.

A task, complex when considered as a whole, becomes easier when it is divided into numerous sub-processes. The very essence of division of labour lies in reducing a complicated task into parts at once simple and easy to perform so much so that each process consists in simple vertical, horizontal, or rotary movements. These simple movements are easily taken up by machines. It should not, however, be understood that unless a process is as simple as to consist in backward, forward, sideways or up and down movements the process cannot be taken up by machines.

There are machines that very skilfully perform tasks too complicated, too fine or too minute for human muscles e.g., machines used in meat-industry in Chicago, that swallow the whole pig at one end and give out sausages at the other; or combination machines that take in rough wool, beat it, card it and spin it before passing out woollen yarn. But the intention is to emphasize the fact that the simpler a process is, the greater is the possibility of its being taken up by machines.

The introduction of machines renders the task of the labourer much easier. The monotonous, hazardous and strenuous task is done by machines and the strain on the muscles and brain of the labourer is lightened, whose duty becomes to see that the machine is working properly. He simply watches the machine that actually works. Only when something goes wrong with it that he stirs himself, sets it right and then once again begins to watch its working. The employment of automatic devices which mechanically stop the machine (as in weaving looms) due to the presence of any irregularity, renders the job of the workman much easier. In some of the cotton mills in U. P. the weavers have been seen talking to their neighbours or even reading a book while

the loom weaves merrily on till it suddenly stops because a thread of the warp is broken. After the necessary adjustments have been made, the machine resumes its work and the workers begin to chat. Again, a hammer weighing several maunds can be worked with the help of a mere lever controlled by a worker, or tons of load can be removed by a crane under the control of a man sitting in a cabin high above. It will be out of place here to recount the thousand and one job which are taken up by machines that relieve the workers of much of their trouble and strain and render their task easier and pleasanter to do. At the same time, the machines demand greater energy, intelligence and sense of responsibility in the workers that use them, which fact leads to an increase in their wages.

Division of labour levels the barriers between different trades that require the employment of machines. The use of machines in various trades requires from labourers almost similar qualifications in them, because though machines differ in different industries, the principles governing their work are almost identical. In some cases the machines intended originally for a particular service may be used for a totally different purpose



after making slight changes in them, as machines used in watch-making can be utilized in making guns; consequently it is easy for a worker employed in one trade to move from it to another trade. He may have to spend a short period in getting acquainted with the new machines, yet soon enough he will find himself at ease there and his past experience of handling and running machines will stand him in good stead.

By constantly watching a machine at work, a labourer may hit upon a device to improve it or get an idea of a new type of machine that may perform the same task much more easily and quickly. Some of the most useful inventions have resulted from such an intelligent observation and interest that the workers have felt in their machines.

Finally, it may be added that division of labour leads to a great economy in energy. Every man can be assigned a task that is suited to his individual capacity—intelligence, strength and application—and he is employed there constantly so that no waste of energy is allowed. It means that the greater efficiency of productive effort is made possible due to the introduction of division of labour.

### **Disadvantages of Division of Labour.**

The degradation of the workman is considered as a result of division of labour and mechanization of production, as in constantly repeating a simple process the workman is reduced to a purely mechanical role. He becomes an automaton working as stolidly and lifelessly as a machine does. And this monotony of work does not fail to make him as stupid and ignorant as it is possible for any human being to be. It is undoubtedly a painful experience to realize at the end of one's life that all the time of his working hours he had done nothing except driving nails into the soles of shoes or sharpening the points of pins or making a tiny wheel of a watch. But if properly understood, there is no degradation in doing a simple task all one's life. Work as such, if honestly performed, is never degrading, but, on the other hand, dignified; and dignity is not lost if it has been a man's business to do a simple little process all his life. If a person has been only nailing the soles of the shoes, he will have the honest satisfaction of contributing his little bit in giving comfort to human feet in icy coldness of winter and scorching heat of summer. He was a unit in a group of producers, and if any credit goes to

the group for its productive efficiency, the individual must receive his due share. As a matter of fact, without division of labour, certain duties are degrading, just as the work of a sweeper or of a stone-breaker, or of a road-worker who handles the ramrod. The division of labour with the help of machines has improved the lot of such workers rather than degraded them any further.

True, there is monotony in repeating a single process, but it need not make a worker stupid and ignorant and deprive his life of all pleasure. Now-a-days machine workers work for 45 to 60 hours a week and get high wages. They can very well employ their leisure hours in arranging games and sports, running clubs and libraries and reading rooms, learning music and dancing, or cultivating some of the fine arts as painting, and thus by introducing change in their daily life they can make it pleasant and overcome the monotony of working hours. This the labourers can afford to do as, unlike their predecessors a century ago, they have shorter hours and higher wages. Even some of the employers undertake to provide a change and variety in the life of their employees by helping them in arranging their recreations. Under these circumstances it is futile to say that machine

work renders a man's entire life dull and monotonous.

It is true that a workman loses his position of being a producer of a complete article. However efficient in his particular process, his efficiency can be marred or maintained by the work of those that precede and follow him. A weaver may have his task rendered difficult and inefficient if the spinners have not twisted the yarn well, or if the bleachers or dyers spoil the texture of the cloth. This extreme dependence of a workman on other members of the group makes his position unstable and precarious.

Again, any maladjustment in the industries that supply the raw material for secondary industries, may injure them greatly as was the case in the coal strike of 1926 in England, when almost every other industry was brought to a stand-still by the refusal of coal workers to continue their work. In times of famines and drought, when agriculture suffers in India, every other industry in the land stands to suffer. For example, the manufacture of gunny bags is very much affected by the failure of crops. But in the case of an intentional injury aimed by a group of people or other dependent groups, it may be hoped that

such a danger will be mitigated by a realization of identity of interest and mutual welfare. If a group of workers realize that by harming other groups they will also be harming themselves, they will hesitate before they undertake any such injurious action. Spread of education and trade-union movement among workers have made them realize that they belong to the same class of workmen and that their poverty or prosperity depends upon mutual actions, and that it will be a stupid and short-sighted policy to attempt to harm others as in this way they harm their own interests.

### EXERCISES

1. What is meant by Division of Labour?

When two or more men co-operate to perform a single task too difficult to be carried out by one man alone, for instance in raising a heavy weight two or more men unite their efforts, will you call it division of labour?

Can we say that division of labour implies co-operation of labour? Illustrate the various forms of division of labour by means of Indian examples.

3. What practical use will you make of your

knowledge of division of labour, if you settle in your life as the head of some educational institution? Is the principle of division of labour taken advantage of in games?

4. Examine the advantages of division of labour and weigh them against its disadvantages. Do you consider caste-system as economically injurious? Give reasons for your answer.

5. Show how division of labour increases production and leads to the invention of machinery.

6. Explain why division of labour within trades was usually necessary before machinery could be introduced and why the introduction of machinery caused a further division of labour.

7. How will you interpret the following from the economic point of view:

(a) Practice makes a man perfect.

(b) Jack of all trades and master of none.

8. Show how division of labour

(a) leads to economy of time and of tools, to quickness, dexterity and adaptability;

(b) can find work even for the cripple, the blind and children;

(c) can secure better co-operation.

9. What is meant by territorial division of labour? Explain with the aid of suitable illustrations from Indian conditions.

"An industry may be attracted to a certain district because of some natural advantage, such as easy access to raw materials, or the possibilities of obtaining cheap power in the form of water, or coal, or suitable climatic condition".

10. How do the following affect the localization of industries?

Nearness of markets, prospect of establishing a new market, cheap labour, good transport facilities and low rates. Give examples you know of.

11. Suppose you were required to fix the site of a sugar factory. What factors will you take into consideration and why?

12. "The localisation of industry is, in fact, the extension to the whole country and to the world at large of the principle of the division of labour".

Explain as fully as you can.

13. Describe the processes under a system of divided labour in some industry with which you are acquainted. Why does not farming lend itself to the division of labour?

14. How do the following mitigate the disadvantages arising out of division of labour?

Healthy surroundings, hygienic factors, increased leisure, humanitarian legislation, welfare movements.



## Chapter VIII

### LARGE SCALE PRODUCTION

The advantages of division of labour are so numerous and prominent that it will be no exaggeration to say that the efficiency of any productive effort depends on the extent to which division of labour has been adopted in it. These advantages of specialization are realized more and more if the number of labourers engaged in a particular industry increases. It has already been pointed out that the scope for the introduction of division of labour is greater where the labourers employed are more numerous. Thus to realize the economies of specialization to a considerable extent it is essential to employ the labourers on a large scale. To provide work to a large number of workmen, a large number of tools and machines is necessary along with a large quantity of raw material and the use of motive power. To house this large number of labourers and large machinery and large quantity of raw material and finished commodity, large buildings are required. And then the organizing unit has to be large in

order to judiciously combine these factors and work them efficiently to produce things at a low cost. The finished commodities are meant for sale and when these commodities are in large quantities, the liability to make a profit or suffer a loss is also great, that is, risk-taking or enterprise is also needed on a large scale. In short, the entire productive scheme has to be undertaken on a large scale.

Large scale production is another name of concentration of employment. In it are employed on large scale all the factors of production, as explained in the preceding paragraph. This concentration of employment is met with not only in factories which employ machinery and motive power, but also in commercial enterprises like railways and shippings, storage and distributing agencies, and in farming, mining, forestry and fisheries. The essence of large scale production is not the employment of machines and energy in place of manual skill, but the concentration of the factors of production on a large scale. It is possible to collect together, under one shed, a number of labourers with the necessary large raw material, land and organization, where the workers do little work with the machines run by motive power. A silk workshop in Benares run on those

lines will be as good an instance of large scale production as a cotton mill or woollen mill at Cawnpore, though it depends entirely on manual labour while the latter predominately employ power-driven machinery. But it is indisputable that the large scale production as found in modern industries is the result of the factory system, the two main features of which are the use of power-driven machinery and mass production on standardized lines.

### **Economies of Large Scale Production.**

Just as efficiency is another name of division of labour so economy is another name of large scale production. The reason why tendency to produce on large scale is strengthening is the economy that is possible in the use of all the factors of production employed on large scale.

Economy of labour is a very important item of the economies possible in large scale production. It has been pointed out before that the skill of a labourer becomes most productive when he is employed at a very simple process and constantly at that process alone. This condition is fulfilled more in large scale production, where more minute sub-division of labour is possible than in a small business. If the unit of production is a

small one, though the division of labour of a kind can be introduced in it, yet some hands are likely to remain idle for some time as continuous employment for them cannot be provided there. It means that the skill of workmen is not fully exploited and it results in waste. If two businesses employing say, 20 workmen each are combined into one, production will be more than doubled due to the introduction of a more perfect division of labour and a better use of time among 40 labourers.

There is a greater economy of land or space in a large business than in a small one. If the business is doubled in scale, the accommodation required for labourers and machines can be doubled at a comparatively less cost. Upto a certain height, a new storey built does not cost as much as the lower one; the amount of material needed in construction is less; and there is no increase in rent payable for the building site. Even if it is considered advisable to occupy more area, the rent does not increase proportionately. Usually if greater area is hired, the rate of rent charged is considerably lower.

A great economy is affected in capital employed in large scale production. To start with,

the use or generation of greater power costs less per unit, as it is a matter of common experience that a twenty horse-power engine will neither cost twice as much as a ten horse-power engine, nor will it consume double the quantity of coal or oil or electricity required to run it.

The employment of machinery in modern industries is increasing day by day. It is also growing in variety and expensiveness. Now, a small scale business cannot afford to employ expensive machines, nor can it provide constant work for them. It is possible only for large scale business to go in for the latest design of machines available in the market and to introduce them in every process of production where machines can possibly be introduced. The small manufacturer will do much of his work with manual labourers. He may even be unaware of the existence of the latest types of machines that are invented and kept secret by big business concerns. New processes and new machines result from experimentation which a small producer cannot afford, but which forms a part of permanent establishment of big businesses. Thus in the invention and employment of machines, the big business leads the way and reaps heavy profits due to increased efficiency, but the

small business has to remain contented by buying the copy-right when it is possible for it to do so.

The use of raw material is also economised in large businesses. In planning, cutting and finishing a raw material on a large scale, the quantity of the raw material used does not increase proportionately to the number of articles intended to be produced. If one cap can be prepared from a certain piece of cloth, in preparing fifty such caps, less than fifty times as much cloth will be required. The waste involved in cuttings is eliminated and time required in making, planning, and cutting is appreciably reduced. Undoubtedly this economy is due to the efficiency of skill in cutting but it cannot be gainsaid that if the number of caps had not been large, that economy would not have been possible.

Even the waste material, if accumulated in large quantities, can be utilized in some way or the other. If the quantity is small, it cannot profitably be sold away nor can arrangements be made in the factory itself to produce anything from it on economical lines. A big cotton mill can spin the waste cotton into yarn to be used for durries and carpets, but a small mill cannot afford to set up a fresh machine for this purpose. A

big sugar mill can profitably work a distillery to produce spirits from *rab*, a large woollen mill can have a department to utilize the cuttings and shreds of woollen pieces and yarn in making felt caps, hats and blankets.

The economies of buying raw materials and selling finished commodities figure prominently in large scale businesses. Wholesale rates are lower than the retail ones; bigger discount and commission are allowed on heavy purchases; transport agencies permit higher rebates on heavy and bulky traffic; and greater credit for longer periods is allowed on large scale buying. If the scale is big enough it pays to produce the raw material also as the profits of raw material going to other producers and middlemen are eliminated. It will be cheaper for a rolling plant owner to own iron and coal mines, to own a fleet of lorries or a small train to carry the raw material from the pits to the workshop. A sugar factory can likewise prosper more if it owns the surrounding area and grows sugarcane there.

The speed and efficiency of selling the finished commodities is increased. Intensive advertisement and canvassing can easily be undertaken on lower cost. A small printing press will do the

necessary service for bills and posters, and even if advertisements in newspaper have to be necessarily inserted, the hire charges for more space are comparatively lower. Packing departments and distributing vans will reduce the selling expenses, while larger quantities of the stock will provide better opportunity of choice and selection to the buyer and result in heavier sales. In a variety of articles a buyer will more probably find a thing suited to his taste and purse than in a stock offering less variety. At the same time a big business can afford to create new varieties and by appealing to the taste of the buyers, can mould it in its favour. A small business will find such a step too risky and beyond its means. Finally, the cost of production being lower, a large scale producer can offer his goods at a lower price and by quick turn-over make heavy profits. In the market where the purchasers buy the cheaper article, quality for quality, the large scale producer will hold the ground more successfully than the small scale producer.

#### **Limitations of Large Scale Production.**

Economies of large scale production are great and varied and the result is that it offers a strong inducement to the producers to take resort to it, when



competition among them is keen, to capture a limited market. Or, a producer may like to enjoy lower cost of production and thus desire to increase more and more the scale in order to reap greater economies. The danger in such cases lies in the fact that the scale of the business might be increased much beyond the capacity of the market to consume the entire produce. The commodities that are produced under any system of production are meant to be sold away, and there will be no gain in increasing the quantity of an article, however cheap its price in the market, if its entire amount cannot find enough purchasers.

Again, there is not much scope to increase the scale of a business where the producer has to attend to individual customer and satisfy his personal taste or requirements. A photographer may occasionally get a chance to print a large number of copies of a certain picture, but usually a small number of copies of a photo is required by a customer and consequently it will not pay him to maintain a big establishment. In tailoring business, where every customer has different means, tastes and bodily measurements, there is not much chance to have production on a large scale. In those tailoring shops which employ a big number of hands is to be found

the multiplication of a unit rather than its enlargement, and there could as well have been more than one business doing the same amount of work as economically as when they are kept under one shed.

Production on large scale may not be economical if the raw material used in it is precious and the need for strict personal supervision of the employer at each step is great, as in diamond cutting. A jeweller's business likewise needs be run on a small scale as the quantity and the quality of an ornament required by customers varies enormously. Also in this, as in the business of diamond cutting, the raw material used being very precious, the need for strict personal supervision is great, but it will not be as good if the scale of production grows unwieldy.

Then there are certain industries like agriculture that do not allow much scope for the economies of division of labour and large scale production. Work being seasonal and scattered over a long area, it is difficult to introduce effectively the division of labour and to easily supervise the work of labourers. It is admitted that agriculture as an industry can employ a large amount of factors of production but not so much as is possible in manufacturing industries.

Finally, it is seen that when the application of

labour and capital is increased beyond a certain limit, production becomes rather uneconomical.

### EXERCISES

1. What is meant by large scale production ? In your answer refer to Indian industries.
2. What are the chief advantages arising out of large scale production ? Has the small producer any special advantages ? How far is the former likely to drive out the latter ?
3. Give examples to show the class of industries in which advantages of large scale production are most marked. Indicate the limitations of large scale production.

## Chapter IX

### THE LAW OF PRODUCTION

**General Observations.** Every producer wants to reduce the cost of production of the commodity he produces. This he contrives to do by introducing as perfect a division of labour and by employing as efficient capital as he possibly can under the circumstances. And as the economies of production are more prominent in a comparatively larger business, he feels encouraged to increase the scale of his business. But his experience does not allow him to invest more than a certain amount of capital and engage more than a certain number of labourers in his business. This experience becomes a custom in course of time and such a custom is generally followed by every producer carrying on the same type of productive activity.

All farmers, for example, in a certain region noted for wheat production know that the wheat field requires three or four ploughings; that if the rains have been normally good in the early stages, one watering is enough after the germination of the seeds; that under the given conditions of cultivation

fifteen seers of wheat is sufficient for seed to be sown into a bigha (5/8 acre) and so on.

They have also learnt from their ancestors' long experience that they cannot expect a piece of land under given conditions to yield more than a limited crop; that all the food of the country cannot be raised on a single plot of land even if labour and capital were increased enormously; and that poorer and less favourably situated pieces of land have to be brought under cultivation from time to time.

On this experience of mankind the economist bases his most celebrated law which may be called the law of production.

**The Law of Production as applied to agriculture.** Since time immemorial it has been recognised that there is a limit to Nature's bounty; that she cannot be coaxed to yield *any* amount of produce. A certain piece of land can give but a limited crop and no cultivator, howsoever skilful, can get more than that. Even the maximum quantity of crop is never raised, for the cultivator knows from experience which his ancestors have gathered for him that in the output of any piece of land there is a limit beyond which he finds no advantage in proceeding because it does not pay him

to take the extra trouble or to incur the extra expenditure. He can certainly raise a bigger crop than the one which he is accustomed to grow only if he cares to plough deeper, use more manure, prepare a better seed-bed, destroy the smallest weeds and protect the harvest from insects, birds and wild beasts so as to minimize the loss; but he knows that the increase in crop thus brought about costs more than it is worth; therefore he never cares to do that. His experience has taught him to realise the potent fact that the output is not necessarily doubled with the doubling of the outlay; that the total output is less in proportion than the cost on labour and capital applied to a certain piece of land.

The economist expresses this simple experience of the cultivator in his own way thus: Suppose a farmer grows wheat and pays the labourers and the capitalists in kind. He pays the first instalment of 25 seers of wheat to labour and capital which he employs upon his land, and gets a produce of 100 seers of wheat for that cost. Next time he spends 50 seers of wheat to employ more labour and capital to work upon his field and gets, say, 160 seers of wheat. A third time his cost comes up to 75 seers of wheat and the resulting crop to, say, 200 seers of wheat. A fourth time, his cost is 100 seers of wheat

and the yield of his field is 225 seers of wheat. Thus when the cost on labour and capital is made twice (from 25 to 50 seers), the produce is increased, from 100 seers to 160 seers, but not doubled. When the cost is increased from 50 seers to 75 seers the output is changed from 160 seers to 200 seers. The produce is increased, but less in proportion than the cost. The cost 75 seers bears with the cost 50 seers the proportion of  $75 : 50$  or  $3 : 2$ , whereas the produce 200 seers bears with the produce 160 seers the proportion of  $200 : 160$  or  $5 : 4$ . The fraction  $5/4$  is smaller than the fraction  $3/2$ . Similarly, when the cost is raised from 75 seers to 100 seers the ratio between 100 and 75 stands at  $4 : 3$ ; and the corresponding produce of 225 seers and 200 seers stands at the ratio of  $9 : 8$ . The proportion  $9 : 8$  is less than the proportion  $4 : 3$ . If, on the other hand, the produce were 100, 200, 300 and 400 seers respectively, the ratios would be  $2 : 1$ ,  $3 : 2$  and  $4 : 3$  which means that they would be the same as the ratios between the costs; the produce would then be said to increase in the same proportion as the cost. In fact, the produce does not increase in the same proportion as the cost, because if it were so, people would raise any quantity of produce from a single plot of the country by

putting on it the necessary amount of labour and capital, and would not care to bring several acres of land under the plough and unnecessarily increase the cost and trouble of management thereby and also pay a larger amount of rent.

From this it follows that a general statement with regard to this tendency of production from land may be made thus: As the cost on labour and capital applied to a certain piece of land is increased, *a less than proportionate* return of total output is generally obtained as a result thereof.

25 seers of wheat which measure the cost of labour and capital represent the cost of one unit of productive power. They constitute what we technically call a doze of labour and capital. Thus 50 seers of wheat measure 2 dozes of labour and capital and 75 seers 3 dozes, and so on.

The above fact of production may be expressed in another way also. From one dose of labour and capital an amount of 100 seers of wheat was obtained; from two doses of labour and capital, the quantity of wheat obtained amounted to 160 seers. Evidently therefore, the amount of 100 seers was due to the application of the first dose of labour and capital and the additional amount of 60 seers was due to the application of the second dose of



labour and capital. Similarly, when three doses of labour and capital were applied, the total produce was equal to 200 seers. Therefore the third dose of labour and capital increased the previous total output of 160 seers by 40 seers. In a similar manner, the fourth dose of labour and capital gives 25 seers of wheat. If doses are applied one after another, we may say that the amount of wheat raised from their application is 100, 60, 40 and 25 seers in succession. These successive amounts of produce are the additions made to the total output with every doze of labour and capital applied one after another. They may, therefore, be termed *additional* or *marginal* returns of produce. These marginal returns diminish, as is quite evident from this illustration, with every successive doze of labour and capital. Hence the law of production may also be worded thus:

As successive doses of labour and capital are applied to a plot of land, the marginal returns of produce generally tend to diminish.

Since the marginal returns tend to diminish, the law of production is more generally known as the Law of Diminishing Marginal Returns. The word 'marginal' is very often omitted for reasons already stated in Consumption. The shorter name

'Law of Diminishing Returns' will be used in this treatise.

**Diminishing returns expressed in terms of money.** The tendency of returns to diminish with the application of successive doses of labour and capital can be expressed in terms of money also.

As an illustration, let us suppose that the amounts of marginal produce due to successive doses of labour and capital stand as shown in the table below.

Doses of labour and capital, Marginal returns  
each costing 25 seers of wheat

First dose	100	seers of wheat
Second dose	70	" "
Third dose	50	" "
Fourth dose	35	" "
Fifth dose	25	" "
Sixth dose	18	" "
Seventh dose	13	" "

If the rate of wheat be supposed to be 8 seers a rupee, the value of 25 seers of wheat at this rate is Rs. 3|2 and that of 100 seers of wheat Rs. 12|8. Proceeding in this way the whole table as given above may be changed in the following form in which the seers of wheat are replaced by equivalent amounts of money:

Doses of labour and capital, Money equivalents of  
each costing Rs. 3½ marginal returns

	Rs.	a.	p.
First dose	12	8	0
Second dose	8	12	0
Third dose	6	2	0
Fourth dose	4	6	0
Fifth dose	3	2	0
Sixth dose	2	4	0
Seventh dose	1	10	0

For calculations involved in the transformation of the table, it has been supposed that wheat was selling at the same rate at the time of ploughing and sowing etc. as after the harvest. This has been done merely for the convenience of illustration. As a matter of fact, wheat is cheaper after the harvest than in the beginning, unless of course the crops have been very poor ; hence different rates ought to be employed to calculate the cost and the produce if fair comparison is desired between them.

**Causes of diminishing returns.** In agriculture production is limited by the supply of *mineral substances*. There is present even in the most fertile land only a limited amount of nitrogen, potassium, phosphoric acid etc. which are indispensable to plant life. Every crop which is taken from the surface of land reduces the quantity of these

essential substances and thus lessens the fertility of that piece of land. Hence diminishing returns set in. If artificial means are used to restore the fertility of land they simply increase the cost of production without effecting a corresponding increase in the output. The result is that the same old quantity of produce is raised at a higher cost or, in other words, a smaller quantity of crop is produced at the same old cost.

Agricultural produce is also limited by the *time* and *space* necessary for plant and animal life. Man may finish his work quickly but Nature needs time to accomplish her part of the work. For seed to be transformed into ears of corn, months are required, and man has but to wait patiently all that time maintaining himself and his live-stock. Thus labour and capital both have to be fed during this period of enforced idleness. This increases the cost of production or decreases the out-put per unit of outlay. Not that alone, the poor cultivator is tied down to seasons, climate and weather. He is practically at the mercy of nature. Every plant must have a certain amount of space to spread its leaves and roots in. Thus all the available space is used up and man cannot but be content with what little he can get from a given area of land.

Moreover, the pressure of population over land is constantly increasing, whereas the quantity of land is limited. This leads to more and more intensive cultivation of land with the result that diminishing returns stand out much more prominently.

The Law of Production holds true not only to the growing of wheat and other crops, but also to the mining of coal, iron and other minerals, to the cutting of timber and to the grazing of sheep and cattle. It acts in agriculture as well as in all extractive industries.

**The Law of Production as applied to mining and quarrying.** Mines and quarries are Nature's reservoirs of mineral ore and the quantity of such ore in an area is absolutely limited. The total yield which is stored up in one lot in them can be obtained all at once by applying the necessary amount of labour and capital. In an agricultural land, however, the total yield is not stored up in one lot, so that crops are raised year after year. Mines and quarries are exhausted sooner or later, after which they yield no more. The fertility of agricultural land is also exhausted but land recoups its lost powers and begins to yield again.

Keeping in view this essential difference bet-

ween agricultural land on the one hand and mines and quarries on the other, we may proceed to consider how the law of production applies to mines and quarries. As more and more of labour and capital is applied to a mine or a quarry, the cost increases more rapidly than the amount of ore worked out. Sinking of deeper shafts, providing support down below, arranging for light, pumping in fresh air from above, and hauling up of ore and also of labourers mean heavy cost, and the cost goes on increasing with the successive doses of labour and capital applied in exploiting the mine. The quality of ore also usually gets inferior, the deeper is the operation carried. This means that a heavier expenditure is incurred to obtain not the uniform quality of ore but an inferior type of it. Hence the returns in terms of money due to repeated application of labour and capital tend to diminish and look much smaller when placed against the heavy cost undertaken to get them. The tendency of returns to diminish gathers more and more strength as time rolls on and the point of exhaustion draws nearer.

Hence mines and quarries are subject to the Law of Diminishing Returns or, more generally, to the Law of Production.

**The Law of Production as applied to fishing.** Unlike mines or quarries, agricultural land replenishes itself. The fertility of agricultural land is restored sooner or later. The fishes also replenish their store, so that the yield is not exhausted as it does in the case of mines or quarries. The cultivator can draw upon the fertility of only the upper strata of the soil at a time, but the fisherman has a far greater depth to draw upon for his supply of fishes. The chemical properties of the agricultural land are tied down to the soil which is fixed at one place. The reproductive power of the fishes moves about with them and is not stationary at one spot in water.

There is thus a close similarity between agricultural land and fishing areas. Hence the law of diminishing returns is as truly applicable here as it is in the case of agricultural land.

Increased application of labour and capital to fishing in rivers, ponds, tanks and even lakes yields diminishing returns because of the limited supply of fish at a locality. As the stock gets exhausted longer lines are required to fish from greater depths and also longer time is needed for waiting for a catch. Again, the quantity of fish caught goes on diminishing. The same holds good in the case of a

particular kind of fish such as Cod or Herring which are obtained from the sea. In certain cases like pearl fisheries the tendency to diminish is much stronger owing to the difficulties of diving and collecting oysters over extensive bottoms and in deep waters.

Thus the law of production operates in fishing as well.

**The Law of Production as applied to lumbering.** In cutting timber returns decrease as the lumbermen penetrate further into the forest. Each advance into the interior of the forest takes them farther and farther away from their base so that the cost of transport of labour and materials goes on swelling. The cost of production is increased and consequently for every unit of the productive power spent in succession, the returns are decreased.

Hence lumbering also lends itself to the operation of the law of diminishing returns which is only another and more popular name of the Law of Production.

**The Law of Production as applied to building.** In erecting buildings too the law of diminishing returns operates. To build the ground floor of any structure is costlier than the first storey



similar to it, because foundations have to be laid, floor prepared and the roof constructed in addition to the walls, while in the case of the first storey no foundation is to be laid and the roof of the ground floor serves as floor for it. To construct the first storey only the walls and the roof suffice. But the economy of building higher storeys does not last long. As the building rises higher and higher, beams and girders, stone and bricks, mortar and water have to be lifted up—a process that involves loss of time and heavy expenditure. Higher and stronger scaffolding proves more expensive, while the labourers have to devote more attention to keeping themselves steady at a great height. The result is that as storeys are piled upon each other, the cost of getting the same accommodation increases, which is the same thing as to say that if equal expenditure be incurred in building higher storeys, the living space afforded by rooms becomes less and less, that is to say, the returns in terms of space or accommodation diminish.

Hence the law of production applies to building also.

Thus it appears that the law of production is a law of wide and varied application. It operates in genetic as well as in extractive industries. In ma-

manufacturing industries signs of diminishing returns may not be visible soon but certain it is, as one can guess from the general applicability of the law, that they are bound to set in sooner or later.

**The Law of Production as applied to manufactures.** In manufacturing industries the returns begin to diminish when all the economies of division of labour and large scale production have been exhausted and no further improvements can be applied. In other words diminishing returns begin to make their appearance when the scale of the business increases beyond the capacity of the organiser to manage it efficiently.

Thus the law ultimately prevails even in manufacturing industries.

**The tendency of diminishing returns counteracted.** The tendency of returns to diminish is held in check at least for some time by a change of processes. Thus, man not only catches fishes but also hatches them; he not only fells trees but also plants them. He tries to recoup the loss and thereby retard the operation of the law of diminishing returns. By affecting improvements in the art of cultivation, he keeps the soil from deteriorating sooner. Scientific cultivation with a suitable rotation of crops, improved variety of seed,

artificial manures, up-to-date agricultural machinery and better drainage resists the tendency of returns to diminish for a time, though it prevails ultimately. Development in the science of mine-ology and improvements in the art of mining are affected only to postpone the operation of the law of diminishing returns in mining.

In manufacturing industries, diminishing returns set in at a later stage. To counteract the tendency, most up-to-date machinery is made use of, most efficient labour is employed, bye-products are not allowed to waste, scale of business is enlarged so as to affect economies, and most efficient organization enforced with a view to lower the cost of production. In fact, all internal and external economies are introduced in order that diminishing returns may not make themselves felt at an early stage.

To reduce the pressure on land, sometimes more land is reclaimed from waste and thrown open for cultivation. The extent of market is widened by improving the means of communication—thus making the produce to find purchasers far and wide. This increases the value of the produce and weakens the hold of the law of diminishing returns on land.

## EXERCISES

1. State the Law of Production, giving illustrations, wherever necessary, to make your meaning clear.

Don't you think that every cultivator is fully aware of the operation of this law, though he has never heard its name?

2. Discuss the Law of Diminishing Returns. Is it applicable to mining? To fishing in rivers? To building? To manufactures?

3. The results of the application of successive doses of labour and capital to a certain piece of land are set out in the following table:

Doses of labour and capital	Total yield mds. of wheat	Marginal return mds. of wheat
1	10	10
2	25	15
3	36	11
4	45	9
5	51	6

Discuss, giving reasons for your answer, how far it is correct to make the following statement:

'The application of a fifth dose adds only 6 mds. to the total produce. It has resulted in a less than proportional return.'

4. Does the Law of Diminishing Returns relate to the amount which can be produced and not the money value of the amount of the product? Explain your answer by means of numerical illustrations.

5. A man applies the first ten rupees of labour and capital to a piece of land and gets a product of 4 maunds of jute. When he spends Rs. 20, that is, twice the previous amount of money, on labour and capital, he gets a product of 9 maunds of jute. And when he spends Rs. 30, i.e., three times Rs. 10, he gets 11 maunds of jute. This is a product which is less than thrice the product from Rs. 10; hence he gets diminishing returns.

How far is this reasoning correct for the law of diminishing returns? If he were to get 13 maunds of jute from Rs. 30, will he not get diminishing returns?

6. Comment upon the following definitions:

(a) 'With an increased application of capital and labour, *other things being equal*, nature affords in the long run a *diminishing return* of raw produce.'

(b) "..... the quantity of the factors increases more than the increase in the output. In other words the cost of production increases at a greater rate than the amount of the output. This means that the cost per unit of production, that is, the total cost divided

by the number of units of the output, becomes greater than before. This is called the law of diminishing return. . . . ”

7. Which returns, marginal or average, should be taken into consideration in discussing the law of diminishing returns ?

A certain writer gives the following numerical example to illustrate the law and points out that diminishing returns begin when the expenses reach over 600.

Do you agree with him? Give reasons for your answer and suggest improvements, if any.

Expenses of production	Yield	Percentage of yield to expenses
Rs.	Rs.	
200	200	—
300	330	10
400	460	15
500	600	20
600	750	25
700	800	14·2
800	900	12·5

8. State the causes of diminishing returns to labour and capital in agriculture and show how this tendency of returns to diminish may be arrested. Why can the operation of the law not be held in check permanently ?

Supposing it were possible, how will it affect production and the people ?

9. 'This law of diminishing returns is simply a part of the general observation that the product of any given piece of land does not, even under the same conditions of soil and season, bear a constant ratio to the amount of labour and capital used in producing it'.

Explain with the aid of a numerical illustration the meaning of 'ratio' as used in the above statement. What is meant by 'more than proportionate' or 'less than proportionate', commonly used in stating the law of returns ?

## Chapter X

### EXCEPTIONS TO THE LAW OF PRODUCTION

In some cases it may so happen that the application of the first few doses of labour and capital are too inadequate to work up the fertility of the soil to its full. This is often the case with virgin lands in a new country. Much labour has to be expended first to clear the land of growing trees and weeds, to cut ditches and to remove stones. But as labour force is extended, the yield continues to increase and this increase gets a fresh impetus, if the labourers are supplied with the necessary tools to work with. With better utilization of the productive powers of the soil the resulting produce goes on getting heavier and heavier until at last a stage is reached when land ceases to respond equally well. To put this fact in the language of economics, when an uncultivated land is brought under the plough, the successive doses of labour and capital in the beginning may yield increasing returns but a point must be reached when full powers of the soil are developed and beyond which, therefore, further increase in



the application of labour and capital is bound to give diminishing returns.

Similarly, if sea-fisheries of any nature be considered, it may be said that on account of the vast area of operation available and enormous quantities of numerous fishes living and breeding there diminishing returns will hardly be found to occur, however great may be the increase in the application of labour and capital to this industry. If Nature replenishes her store of fish faster than human agency exhausts it, every increase in the application of labour and capital cannot but yield successively greater produce.

Some mines may offer least resistance to labour and capital and start to yield lavish returns to labour and capital in the beginning of their application. An increasing amount of labour and capital applied to mining may successively yield increasing returns at least for a time in the early stages of exploitation.

An improvement made in the art of cultivation or mining and introduced at the time when the returns are about to diminish may raise the return which land affords at that time to the given amount of labour and capital.

Thus it would appear that the tendency of

diminishing returns is in operation except when the amount of labour and capital is inadequate to make the full use of the potentialities of land, or when an improvement is effected which counteracts the operation of the law of production. But if the law of diminishing returns is held in check for one reason or the other, increasing returns follow as a result of successive doses of labour and capital and the so-called law of increasing returns is said to be in operation. Speaking about the law of diminishing returns as applied to a portion of agricultural land, Marshall says: An increase in the capital and labour applied in the cultivation of land causes, in general, a less than proportionate increase in the amount of produce raised unless it happens to coincide with an improvement in the arts of agriculture.

His statement is well guarded and qualified. He mentions without any reservation that the tendency of returns to diminish may be counteracted by the improvements effected. The phrase *in general* which he uses implies a few other limitations. For instance, the increased knowledge of agricultural chemistry has allowed more capital to be applied to land without provoking the action of the law of diminishing returns. Again, if labour

and capital applied at first are not adequate, increasing returns to doses of labour and capital may precede diminishing returns. Hence Marshall does not make any sweeping statement but makes his meaning at once precise and clear by using qualifying phrases to denote that the operation of the law of diminishing returns may be held in check under exceptional conditions.

**The Law of Increasing Returns.** According to this law, if more of labour and capital is applied in a productive activity, the returns due to successive applications increase. If the cost of a dose of labour and capital is 25 seers, as supposed in the last illustration, the returns due to successive doses may be taken to be 20, 50, 70, 85, 95, 102, 107 and 110 seers, and so on. These figures are in the ascending order and therefore establish the tendency of increasing returns.

It must not, however, be overlooked that this law is a temporary phase and operates only as long as the influence of the exceptional conditions persists to hold the main law of production in check. In manufacturing industries, however, increasing returns are far more prominent and frequent than in other industries.

In some industries, especially in extractive industries when an improvement *just* offsets the tendency to diminishing returns, it does not give increasing but constant returns. Sea-fisheries also sometimes appear to show constant returns. When constant returns are obtained in an industry it is said to be working under the influence of the Law of Constant Returns.

**The Law of Constant Returns.** This law is said to operate when the application of successive doses of labour and capital is followed by the same increase in output every time. If in any productive activity, decreasing returns are balanced by increasing returns, it must yield constant returns. This is generally the case in those industries in which the raw material used is produced under conditions of diminishing returns and the manufacture of this raw material into a finished commodity is carried out under conditions of increasing returns, in such a way that the tendencies of increasing and decreasing returns are equalized to yield constant returns. For example, if a sugar factory produces its sugar-cane, in which the law of diminishing returns must necessarily operate and prepares sugar out of it, which activity must obey

the law of increasing returns, the two forces of increasing and decreasing returns may be at work in equal measure so that the returns that result from the entire activity—cane cultivation and sugar manufacture—are just equal to one another. In the steel industry, similarly, the raw material has to be obtained from the mines which are subject to the law of diminishing returns and the manufacture of iron-ore into steel lends itself to the law of increasing returns. If the two forces are exactly equal and opposite so as to balance one another, the whole production of steel must yield constant returns. The same will hold good in the case of cotton growing and cotton manufacture, or wheat production and flour making.

To illustrate the law numerically, let us use the figures which we assumed in illustrating the laws of decreasing and increasing returns. Let us also suppose that the two sets of figures represent wheat growing and flour making respectively. Then the averages obtained from the corresponding figures of diminishing and increasing returns will stand for the figures of constant returns. For example, the first dose of labour and capital yields, as we have supposed now, 100 units of wheat and the first dose of equal cost yields, according to our

supposition, 20 units of wheat flour; the two doses thus yield 120 units, which comes to 60 units per dose on an average. The figures of averages so arrived at have been set out in the table below.

Doses of labour and capital	Marginal returns of wheat	Marginal returns of flour	Total yield	Average yield
1	100	20	120	60
2	70	50	120	60
3	50	70	120	60
4	35	85	120	60
5	25	95	120	60
6	18	102	120	60
7	13	107	120	60

**The Law of Constant Returns is only hypothetical.** It has been assumed in this law that the disadvantages of the production of raw material are exactly equal to the advantages of manufacturing the raw material into finished commodity. But it is hard to point out cases where such conditions actually exist. The economies of division of labour assisted by the employment of

machinery and large scale production may more than counter-balance the disadvantages of the production of raw material and the net result may be increasing returns. In those industries that employ comparatively cheap raw material, diminishing returns in its production may not count for much and may be almost negligible as compared to great economies in the manufacturing stage. If it is so, constant returns will not be obtained there.

**Law of Diminishing Returns, the only law of production.** Manufacturing does not always give increasing returns but increasing returns are far more frequent in manufactures than in agriculture just as increasing returns are more commonly met with in agriculture than in extractive industries. If production is carried too far, diminishing returns set in in all industries whether extractive, genetic or manufacturing. They may be held in check temporarily but they must prevail ultimately. All forms of productive activities obey sooner or later the law of diminishing returns. The point of diminishing returns becomes operative at a much later stage in manufacture than in any other industry and that is why it appears as if the law of diminishing returns were not applicable to

manufactures but the law of increasing returns which applied to them. Really speaking this is not the case. The law of diminishing returns is the only law which operates in all cases. In the one it may appear at early stages; in the other it may make itself felt only at later stages. But come it must sooner or later. To this general law of diminishing returns we give the name, the Law of Production. The other two laws of increasing and constant returns have no separate existence except under certain conditions. They may establish themselves even so much at times that they may appear to be separate laws altogether. But in fact, they should be treated as only exceptions to the great Law of Production.

**Marginal and average returns.** In almost all forms of productive activity, returns begin by increasing at first, are constant thereafter and then ultimately diminish. The tendency of diminishing returns may operate strongly in one kind of industries, and that of increasing returns may act strongly in another, but the fact must remain that the tendency of diminishing returns is irresistible after all and must prevail sooner or later. To illustrate this, let us assume that in a certain industry returns



to successive doses of labour and capital stand as given in the following table:

Doses of labour and capital	Marginal returns in units	Total returns	Average returns
1	10	10	10
2	30	40	20
3	38	78	26
4	38	116	29
5	29	145	29
6	23	168	28
7	21	189	27

Average returns have been found by dividing the total returns by the corresponding doses of labour and capital. Thus,  $10=10|1$ ;  $20=40|2$ ;  $26=78|3$ ; and so forth.

It must be carefully noted here that production under all circumstances must be carried *at least* as far as the marginal and the average returns balance each other. It cannot be stopped before that. In the above table, the production must

proceed upto the fifth dose of labour and capital because it is only here that the marginal and the average returns are each equal to 29. It may be carried still further, but it cannot possibly proceed beyond the point where the cost (in terms of produce) on additional labour and capital is exactly equal to the corresponding average return. If the cost on each dose of labour and capital is 28 units, the production can go *at the most* upto the sixth dose and no further. If it is 27 units, it can proceed utmost upto the 7th dose. For the guidance of the students, the following two rules will be found to be of great help:

1. In all cases, production must continue *at least* upto the point where the *marginal* and the *average* returns are equal to each other.
2. In all cases, production will proceed *at the most* upto the point where the cost (in terms of produce) on each dose of labour and capital becomes exactly equal to the corresponding average return. But this holds good when no rent is paid. If, on the other hand, all the surplus produce is taken as rent by the landlord, the production must stop as soon as the cost on

each dose of labour and capital becomes equal to the corresponding marginal return.

**Marginal dose** is that dose at which production stops.

Production, it must be carefully borne in mind, does not and cannot stop as soon as the marginal returns begin to diminish. For a fuller discussion of this subject see the chapter on 'Visual aids'.

It may also be pointed out here that from the point of view of productive power, we have decreasing returns, and from the point of view of produce, we have increasing cost. Thus decreasing returns and increasing cost are only two names for the same phenomenon. This is explained in details in the last chapter of this book.

#### FINAL STATEMENT OF THE LAW OF DIMINISHING RETURNS

**When one factor is kept constant, the law operates.** In the case of agriculture, land is fixed and the other two factors, labour and capital are made to vary. When additional amounts of labour and capital are applied to the same piece of land, diminishing returns follow

after a point in production is reached. In the case of mines, the natural treasure in store is invariable. Labour and capital alone can be increased or decreased. Hence diminishing returns set in.

In the case of manufactures, managing capacity is limited whereas other factors can be made to vary. The result is that returns begin to decrease, though in this case, they appear only after a long while. Increasing returns predominate in manufacture for the simple reason that larger amounts produced make possible all sorts of economies which arise from large scale production and division of labour. Also, the larger is the scale of production, the greater is the utilization of by-products. There are savings in management too, if the business expands. In addition to these internal economies, the advantages of external economies are also obtained. If large-scale production is carried on, great economies result in buying and selling, in organising the traffic and in advertising the products.

*Hence, if one of the three factors of production, be it land, labour or capital, is kept constant and the other two are made to vary, marginal returns that follow tend to diminish after a certain point in production is reached.*

If, however, only one factor is varied and the other two are kept fixed, then also diminishing marginal returns accrue to the factor that is changing. For instance, in agriculture, not only can land be kept constant but labour also may remain unaltered. If that is the case, a change in capital cannot but be followed by diminishing returns, and these returns will set in sooner in this case than when two factors change and only one is fixed.

It may, therefore, be concluded that even **when two factors are kept constant, the law operates.**

The question now arises: if all the three factors of production were made to vary, will the law of diminishing returns operate? We, therefore, proceed to consider what would happen if land, labour and capital were varied at one and the same time.

A discussion of this problem naturally leads us to what the economist calls *the principle of substitution*.

**The Principle of Substitution.** The business of the organiser is to secure the maximum output with the minimum cost of production. This he continually tries to achieve by co-ordinating the

various factors in the best possible proportion. Any factor of production which is less efficient in proportion to its cost is displaced by any other factor of production which is more efficient in proportion to its cost. Under given conditions of production, there is always an ideal proportion in which the factors of production can be combined to yield the maximum result with the minimum cost. The closer is the approach in the attainment of this ideal, the better are the results; and farther away one moves from the ideal, the poorer the results he is likely to get.

Let us take a clear example. Suppose the ideal proportion is 2 units of land, 5 units of labour, 3 units of capital, that is to say, 10 units in all. If all these factors are increased and the proportion between them is still maintained, we do not depart from the ideal. For instance, if the proportion is changed to 4 units of land, 10 units of labour and 6 units of capital, the cost is doubled and with it the total output too. But if the proportion of only a few of the factors employed is altered, the law of diminishing returns comes into operation. Thus if the changed proportion stands thus: 2 units of land, 4 units of labour, 4 units of capital, we move away from the ideal and

hence the diminishing returns must set in.

From this it follows that the law of diminishing returns operates even when all the three factors of production are made to vary.

#### VARIOUS SORTS OF SUBSTITUTION

##### 1. Substitution of one factor for another.

###### (a) Land for capital or capital for land.

In agriculture, if more manure is applied, less land is required to obtain the same quantity of produce. If, however, it is costlier to use more manure than to use more land, a greater amount of land must be used to reduce the quantity of manure applied.

###### (b) Labour for land or land for labour.

When the pressure of population on land is intense and all the available amount of land is in use, the same piece is cultivated more intensively, that is to say, there being no possibility of an increase in land, more and more labour is put on the same plot to augment production and meet the increased demand. Thus labour is substituted for land to enhance the quantity of produce. But if all the available land has not been brought under cultivation, more of it is brought under the plough

as demand increases. Here labour force is not increased but the quantity of land to raise a greater amount of produce.

(c) Labour for capital and capital for labour.

The introduction of labour-saving machinery is the best example of capital displacing labour. What hundreds of men would do, is being done by a huge machinery with only a few operatives to work it in a mill today. But if labour becomes so cheap that the employment of machinery is comparatively more expensive, it may again displace machinery.

## 2. Substitution taking place within the same factor.

(a) Dear land for cheap land and *vice versa*.

When factories want to escape the charges of transportation, to employ cheaper\* and more efficient labour, and to estimate easily the wants of consumers, they move into the city and thereby substitute dear land for the cheap one lying away from the city. But sometimes rents of urban lands are so high that they have to move towards the country side and thus use cheap land in place of the dear one in the city.

(b) Dear labour for cheap labour and *vice versa*.



Dear labour tends to displace cheap labour, provided it is equally efficient in proportion to its cost. For, not only does this reduce the number of the supervisors but also makes delicate machinery and other tools safe from suffering breakage or any other loss. A little saving in the cost of management and other expenditure is the result which tends to bring down the cost of production.

As more and more machinery is introduced in production, even unskilled labour finds employment for it is cheap; and the services of the skilled labour are usually dispensed with because it is dear.

(c) Expensive capital for cheap capital and *vice versa*.

From candles we go to lamps, from oil to gas, and from gas to electricity. In the same way, in a printing press, more complicated and expensive machinery often finds place for an inefficient and cheap one.

If the size of the business is not big enough to afford an expensive and most up-to-date machinery, cheap machinery has to be employed.

(d) Expensive raw material for cheap raw material and *vice versa*.

When any raw material becomes very costly

to use, the manufacturer is naturally anxious to find out a cheap substitute even though its use is likely to pull down the quality of the finished product and thus cause a reduction in the price as well, provided the fall in price is proportionately less than the fall in quality. For this reason, jute is sometimes substituted for hemp.

But if a certain commodity becomes more popular than another it necessitates the use even of the expensive raw material. The decision is then made on the basis of the comparative prices of the raw materials that can be used and the comparative prices of the finished commodities that are produced from them.

These several sorts of substitution are very often possible at one and the same time. When a given amount of expenditure has to be distributed over the several factors of production, it is carried out in almost the same way as the distribution of income over various heads of expenditure. Analogous to the law of equi-marginal utility already mentioned in Consumption is, therefore, the law in production which we call the law of equi-marginal productivity.

**The Law of Equi-marginal Productivity.**  
This law is essentially the same as the law of equi-

marginal utility which goes under a slightly different name in this department of economics. According to this law, the given amount of expenditure is so distributed over the several factors of production that the marginal productivity of each factor tends to be the same. A numerical illustration will suffice at this stage to make the meaning of the statement clear.

Units of Expenditure	Returns (in terms of produce) to		
	Land	Labour	Capital
1	40	50	45
2	36	45	36
3	33	38	32
4	<b>30</b>	35	<b>30</b>
5	25	<b>30</b>	27
6	20	26	20
7	15	20	13
8	8	12	6

If the given amount of expenditure to be incurred is 13 units in all, it will be so distributed among land, labour and capital as to make the marginal returns to be equal to 30 in each case. This is shown in the above table by thick figures. If the expenditure to be distributed is more, say, 19 units, the distribution will be carried out in such

a way as to make the marginal returns to be equal to 20 (shown in italics) in each case as shown above.

If a dose of labour and capital which is applied to land is measured by Rs.30 this sum will be distributed over labourers, tools and implements and raw material not at random but according to the law of equi-marginal productivity so as to ensure the greatest advantage. Just as a dose of medicine which does not contain ingredients compounded in their right proportion is likely to do some harm to the patient, so also a dose of labour and capital may not yield the desired results, if labour and capital are not combined in the right proportion.

### EXERCISES

1. What are the exceptions to the Law of Production? Explain as clearly as you can the limitations imposed by the phrase 'other things begin equal' in the following.

'At any given time and place, other things being equal, there is a point in the investment of labour and capital upon *natural agents*, beyond which additional doses of labour and capital will yield diminishing returns'.

2. State the Law of Increasing Returns, and explain how increasing returns result from division of

labour, from specialization of machinery and from the extension of facilities for transportation on a large scale.

How is the Law of Increasing Returns related to the Law of Decreasing Returns?

3. Consider the part played by internal and external economies in bringing about increasing returns in industry.

Show that greater external economies are likely to lead to greater internal economies.

4. State and explain the Law of Constant Returns. Does land yield constant marginal returns? Give reasons for your answer.

Is this law a hypothetical one?

5. Consider which of the following two statements is correct and why?

"An industry is subject to increasing returns if the price of its product falls with the industry's expansion, to decreasing returns if the price rises, and to constant returns if the price does not alter."

"It is worthy of note that the law of productivity refers to the quantity, and not to the price. For example, the law of diminishing returns may be operating in regard to the output, yet there may be a fall in the cost per unit of the output as a result of the fall in the prices of the industrial agents; or, the same thing may happen with a rise in the price of the finished commodity, where

the prices of the industrial agents remain the same."

6. Comment upon the following statement:—

"If the price of the produce is high owing to strong demand for the produce, then the farmer will continue to increase his expenditure of capital and labour upon the land after the point of diminishing returns is passed, because the high price of the product will remunerate him even when the increase in the amount of produce is less than proportionate to the increase in the amount of capital and labour invested in the cultivation of his land."

Does a producer stop as soon as the diminishing returns set in? If the demand for the produce is not high, will the law of diminishing returns not at all come into operation?

7. While explaining the law of diminishing returns to students, a teacher took the following numerical illustration:

Doses of labour and capital	Yield in bushels	Returns in bushels
1	10	10
2	40	20
3	75	25
4	104	26
5	125	25
6	144	24

} Increasing re-  
turns

} Decreasing re-  
turns

The returns are got, as he said, by dividing the yield by the corresponding doses of labour and capital. It would appear from this table, he went on to say, that the returns begin to diminish from the fourth dose and continue to decrease thereafter. This is what we understand by the law of diminishing returns.

Is this the meaning of the law of diminishing returns? Does the law begin to operate from the fourth dose? How far, in your opinion, should production in the above case be pushed on *at least*? Point out the limit to which production can proceed *at the most*.

8. Explain as clearly as you can the following statements of the laws of returns:

"When successive doses of expenditure applied to an industry (agricultural or manufacturing) cause less than proportionate increments in the output of that industry, it is said to operate under the law of diminishing returns."

"An industry is said to respond to the law of increasing returns when successive doses of expenditure applied to it cause more than proportionate increments in the output of that industry".

"Whenever successive doses of expenditure yield proportional increments in the output of an industry, it is said to obey the law of constant returns."

9. "The principle of substitution states that a

producer goes on substituting one factor for another, or one kind of the same factor for another, until he finds it disadvantageous to do so". Explain by means of suitable illustrations.

10. The law of diminishing returns may be stated simply: *If one of the three factors of production—land, labour or capital—remains fixed, the increase of one or both of the other factors, after a certain point is reached, will not return a proportional increase.*

If all the factors of production were made to vary, will the law of diminishing returns operate? Consider all the cases that are possible.

11. With the aid of numerical examples explain the meaning of the following:

We have increasing or decreasing returns, as we move towards or away from the ideal proportion in which the various factors of production can be combined. Constant returns we get only when the ideal proportion is reached and kept up.

12. "At any given time or which comes to the same thing, knowledge and circumstances remaining the same, there is what may be called a point of maximum return, when the amount of labour is such that both an increase and a decrease in it would diminish proportionate returns. . . . If we start from what I have



called the point of maximum return, we can say of manufacture as well as of agriculture that returns diminish as we move in either direction from that point."

Explain with the help of curves to make your meaning clear.

13. Is it true to say that "while the part which nature plays in production shows a tendency to diminishing return, the part which man plays shows a tendency to increasing return."

Can we briefly state our conclusions thus: As each out of the three factors, land, labour and capital predominates in production, we have diminishing, constant and increasing returns respectively.

14 State and explain the law of equi-marginal productivity. How does it differ in principle from the law of equi-marginal utility?

15. Comment on the following:

'So far it appears as if there were one law for agriculture and one for manufactures, returns tending to diminish in the one type of industry and to increase in the other.'

## Chapter XI

### DEVELOPMENT OF PRODUCTIVE EFFORT

#### HOME INDUSTRY SYSTEM

Family Economy or the Home Industry system is the name given to the system of production in primitive society. Under this head is not included the life of savages, who lived no better than wild animals, subsisting upon leaves and fruits and meat of small animals that they could occasionally kill. But we include those men who were at a stage of civilization when they had realized the advantages of settled family life bound by the ties of love and affection in addition to economic motives. Then they were not savages knocking about in the jungles, were engaged in hunting, pastoral or agricultural industry in its crude form.

The interests of the members of the family were so identical and limited to the family that they could have easily supposed that there were no other families existing apart from their own except when it came to fighting against them. People depended upon the members of their family for the satisfaction of all their wants. Articles needed

for the satisfaction of these wants were produced within the family, and the products were meant to be consumed by the family alone. Members of the family were both producers and consumers. Every member was working for all and was sharing the product of the labour of all.

It was but necessary that families had to be so solid and self-sufficient. Man's control over Nature was slight as human mind was not developed enough to understand her and develop her resources. He was more or less at her mercy and had to make the best of scanty resources in hunting animals, grazing cattle and growing catch-crops. When in a particular locality either animals were exhausted or no good pastures were left to graze the cattle, families had to move in search of better places with plenty of wild animals and pastures or fertile ground. There were other families too moving about in search of the same kind of facilities. As such facilities were only limited, families came to clashes for their occupation and then there was fighting and bloodshed. The weaker and smaller families were either destroyed or turned into slaves by the stronger ones. In these circumstances the family ties had

to be very strong, as men had to depend upon themselves alone for protecting their lives and earning their living.

It should be noted that all the factors of production were supplied by the family alone. Nobody outside the family was engaged as a labourer; no capital was borrowed; work was organised by the head of the family, usually father or the eldest member. There was no question of risk or enterprize there, as all conditions involving risk were absent in such a family life.

#### THE HELP OR HIRE SYSTEM

As improvements in the art of agriculture and cattle-breeding were made, people began to depend less and less on the dole of Nature, but succeeded in compelling her to yield richer harvests. Life became more prosperous and more settled; nomadic instinct grew weaker as the need to move about was less, and families settled down in small villages which later on grew into towns and cities. In these small villages or hamlets, living was easier and safer, and some members of the family could be spared as the rest were able to produce all that the family needed. These extra hands who found little scope for their work in their original families,

left them and went about to offer their services to those families that were short of hands, and were employed there. They were employed but not in the sense workers are now-a-days employed on a field or a factory where they work so many hours a day, get paid so much a week and have no deeper interest in the welfare of the business. In olden days the workers were treated as members of the family among whom they worked and lived as if they belonged to the family. This system of getting help from members of other families is called the Hire or Help System.

#### APPRENTICESHIP SYSTEM

This system was very common in western European countries in mediæval times. There usually a young man left his home and went out in the world to carve out a career for himself. In order to pick up an occupation he had to attach himself as an apprentice to an artisan or a craftsman; was trained there for some years till he became an efficient craftsman himself. During this period of apprenticeship he lived in the family and at times had to pay for his training by rendering domestic service. Usually the life of these youngmen was none too pleasant; they were often treated

as strangers in the home, and accounts show that they had to run away to escape the misery of being apprentices. Some were fortunate enough to enter the families of kindly craftsmen who had no sons; there they received better treatment, were properly trained and finally settled down as partners to the business with the additional prospects of marrying the master's daughter.

The craftsmen sold their wares to their neighbours or produced them on the design supplied by them. They made to order and obviously there was no question of risk at this stage. The requirements of the neighbours being few and simple and fully understood by the local craftsmen, they were in a position to produce as much as it was necessary to meet the needs of the purchasers. For supplying the local needs production had to be carried on on a small scale, and all the factors of production were provided by family itself except a little labour that they got from apprentices or hired labour.

#### DOMESTIC SYSTEM

The primitive villages remained at the stage of self-sufficiency for a long time—producing all that they wanted locally. They could not do otherwise as in the absence of roads and quick conveyances

no intercourse was ordinarily possible with other villages distantly situated. But when the number of these hamlets grew in a region, friendly relations between them developed. Then it was decided for the convenience of all to hold a *fair* at a central village where people from neighbouring villages could gather to buy and sell what they could not do in their own villages. These fairs afforded great scope for the sale of articles prepared by craftsmen who were rather skilled in their work, and could, at the same time, sell them at a lower price. Naturally, their wares were desired more and more. To produce the increased quantity of wares, more of labour and capital was necessary than what the families had been employing so far.

There was the chance for rich families. If some families of craftsmen were rich enough, they increased the scale of production, affected greater sale of their articles and grew prosperous. The poorer craftsmen had to cease to be producers on their own account and began to work for the richer families. These rich families supplied the poor artisans with either raw material or tools or both. The artisans worked in their homes, hand-

ing over the articles, when completed, to the rich families or merchants whose business was to sell rather than to produce. This is called the Domestic System of production which is still very popular and provides means of living to silk-weavers of Benares and *Tamras*, copper-workers, of Almora, and others.

There is another variety in this Domestic System in which the artisans without taking any help from outsiders completely produce the commodities in their homes and only sell them to the mahajans or *kotbi-walas* as they are called.

**Supply of factors of production in Domestic System.** This system grew up as a direct result of the widening of markets. Articles were wanted in great numbers and at a low price. This condition the poor artisans could not fulfil. These artisans were poor and there was the need for more capital, consequently they took up the position of workers for others. In doing so they retained their personal liberty and worked as and when they liked in their own homes. They undoubtedly lost their position of independent producers, but they were also spared the risk or enterprize which had become a part of the business. The rich mahajan



could afford to wait for the sale of the finished commodities while the poor craftsmen could not. Then, none knew what price these commodities will fetch as competition became a feature of the fairs or village markets to which craftsmen from the neighbouring villages flocked. Thus risk or enterprize began to play an important part in business. This enterprize was undertaken by mahajans who form the nucleus of the capitalist class of to-day.

#### FACTORY SYSTEM

The credit of creating the factory system goes to the improvements in transport and communication that made the extension of markets possible. Roads were built and rivers were bridged. Later, came postchaises, railways, ships and motor cars. But the day of pack animals and bullock carts was not completely gone. They were a popular means of transport in undeveloped areas. Now new worlds and new markets began to be discovered. All this meant greater opportunities for bigger business. The capitalist producers could get raw material from distant lands and could supply finished commodities to people living hundreds and thousands of miles

away. For this, large scale production became necessary and large scale production necessitated the employment of a large number of workers and a huge amount of capital.

Craftsmen and artisans worked at their leisure in their homes under the domestic system and therefore a rapid and continuous supply of goods could not be possible. At the same time, these goods produced under different home conditions and by workers of different degrees of training and efficiency were different in design and workmanship. It was difficult to sell such goods that were not uniform in distant markets. Moreover, their prices were not low enough to suit the purse of the poorer people at home and abroad. These difficulties compelled the capitalists to organise the entire process of production under their personal supervision. This system ensured regular work under regulated conditions. The uniformity of tools, raw materials and design produced uniform commodities. Thus came into being the Factory System which holds the ground today and promises to enjoy a prosperous future.

Under this system there came to be a greater specialisation in the supply of factors of produc-

tion. Crowds of workers flock in a building with nothing else but their brains and muscles: they supply only labour. Capital, either raw material or tools, is supplied by the employers. The employers belong usually to what is called the *capitalist class* because they own and employ in business huge amounts of capital. The workers, deprived of all liberty of initiative and self-will, are wage earners and form what is called the *labour class*. In small factories generally the employers organize the business; in bigger ones the management is in the hands of a set of people who are specially trained to organize production. They are called supervisors or managers,—organisers. Of course, the risk is taken by those who own the business—actual owners, not by those who lend money to those capitalists and are their creditors.

In its earlier stages the factory system was not much different from the domestic system except that the workmen worked in the house of the employers rather than in their own. The employer could personally supervise their work but supplied them the old crude tools and instruments. Labourers depended entirely upon their manual

power and manual skill as no means of motive power nor machines were introduced. By and by water, coal, oil and electricity were utilized to run all kinds of mechanical appliances. Later on, machines were invented and gradually introduced in nearly every form of production. The machines have proved handy in making not only bulky and heavy goods, but their services also are indispensable in the production of very fine and delicate articles. Common as they are in a factory, a station, a paper stall, a tobacconist's shop or a confectioner's store, they have been installed in our homes where in course of time they will be expected to take up every kind of task except, perhaps, digesting our meals in our stomach. In spite of its widespread adoption the factory system, with its use of power and machines has not killed every other system of production. To say that the modern age is the age of machines and motive power simply means that the factory production is the reigning system of production to-day. So far as indications go, in many a field of economic activity it may push all other systems in the back ground; yet they are still holding up their head in the world. In almost

every country these systems are working side by side; and there are countries where the domestic system is stronger than the factory system as in Switzerland, or where family is an important unit of production as in rural India.

### EXERCISES

1. What is meant by Family Economy? Comment on the combination of different factors of production under this system.

2. Would you like to be self-sufficient in productive effort? How far is it possible for a modern family to be self-sufficient? Is such a state of self-sufficiency desirable from the point of view of economic development?

3. To what extent does a 'family' remain a unit of production in our country? Enumerate forces that are weakening the family solidarity.

4. Do you still come across instances of hire-system in Indian village life? What is the system adopted in your part of the country in paying for the services of the hired hands?

5. Clearly giving the important features of 'apprenticeship system' consider whether under the caste system the youngmen get better training or under the apprenticeship system.

6. Give a detailed account of the organisation of production undertaken by any two of the following:—

(1) *Tamtas* of Almora, (2) Shoe-makers of Shahadara (Delhi), (3) Marble workers of Agra, (4) Glass workers of Ferozabad, (5) Brass workers of Moradabad, (6) Lace workers of Lucknow, (7) Carpet weavers of Mirzapur, (8) Silk weavers of Benares.

7. Fully describe the working of any cottage industry you are familiar with under the following heads:—

(1) Supply of raw material, (2) Hired and family labour, (3) Nature and efficiency of tools used, (4) Supply of credit, (5) Marketing of the produce, (6) Local or foreign competition.

8. What do you mean by 'Cottage industry'? Give a comparative account of the factors of production in the case of a village weaver and a city shoe-maker.

9. On what grounds do you prefer factory to domestic system of production?

10. Do you think that the factory system, with all its merits and demerits, has come to stay? What are the abuses which the factory system has brought about? Can you suggest some remedies to remove them?

11. 'Factory system was the outcome of mechanical inventions'. How far do you agree with the statement?

12. Trace the effect of the means of transport and communication on the rapid growth of factories in place of cottage industries.

13. Under what system of production would you place the modern economic activity in India? Give reasons for your answer.

14. 'Modern age is the age of machine and motive power'? Is the statement true?

## Chapter XII

### TYPES OF BUSINESS MANAGEMENT

#### INDIVIDUAL OWNERSHIP

The simplest form of industrial management is the one-man business. This has been almost the universal type in the Domestic system of production, and even now is the most popular form to be found where market is only a limited one. In villages and small towns where population is composed of mostly poor people, only small business can prosper. The typical example of the independent producer's business is presented by the artisan or the petty shopkeeper class. In such businesses the owner, whether an individual or a family, does most of the work himself and supplies his own capital to start with. Of course, no body else is there to share the profits or the losses of the business with the owner. The owner thus combines into one the functions of wage-earner, capitalist and enterprizer.

Even if outside labour and capital are employed in the business, the nature of the individual ownership is not altered. Usually the single ownership



business is run on a small scale, yet it may be big enough to require the services of extra hands, just as for operations like weeding or harvesting. On even a small farm, hired labour is needed, and being short of personal capital a farmer may also have to borrow money to meet agricultural expenses. In spite of this external help the business remains essentially one-man business. It is not difficult to come across instances of big businesses owned by individuals—businesses that employ a large force of labourers and a huge quantity of capital—but they are mere exceptions. It can be safely assumed that individual ownership remains a representative of small scale enterprise.

#### PARTNERSHIP

Individual deficiency of capital and managing skill is made up by partnership. When one man-business grows due to flourishing trade and widening market, it may be necessary to take in one or more partners in the business, who will bring to it their labour and capital. Very often it is seen that capital and organising skill are not found in one man. There may be persons who have plenty of capital which is lying idle as they do not possess the requisite skill to use it productively; again, an effi-

cient organizer may be seeking some body else who could supply him capital as he has none of his own to start a business. To bring them together in a productive way, partnership is needed.

**In partnership there is some specialization in the contribution of factors of production.** A partnership will generally be a business on a larger scale than the one-man-business. If it is a petty one, no labourers may be employed; but more often than not, due to its big scale, labourers are engaged. And when it is done so, capital and management alone are left to be supplied by the owners.

**Mutual confidence among partners is the essential condition of its success.** A partnership business can live for any appreciable time only when the partners have complete faith and confidence in the honesty of one another. Many a ship of such businesses has foundered in the troubled waters of suspicion and insincerity among partners. The *liability* in partnership being *unlimited*, there is great risk to which one or more partners may be exposed by inefficiency or unscrupulous conduct of any other partner. A contract of services or capital, entered into by one is binding upon all the partners and they may have

to taste the bitter fruit of his short sighted selfishness if the contracting partner plays a dishonest role. There being unlimited liability, any of the partners can be made to pay the creditors all their dues upon the business as a whole howsoever small an interest he may be holding in it. A rich partner contributing, say, Rs.1,000 being  $\frac{1}{4}$  of the share, may be forced to meet the entire liabilities of the business even when the loss comes to many times Rs.1,000. This great drawback can be removed if the partnership is registered as a public company because then the liability becomes limited.

**Joint-stock Company.** Improvements in the means of transport and communications made it easier for the producers to meet the demand of a wider range of market. It remained no longer necessary to be near the consumer to be able to supply his needs as transport facilities began to distribute very efficiently the commodities produced on a large scale at some central place. Joint-stock companies, therefore, grew up to serve the ever-widening market, as such concerns enjoyed certain advantages over the partnership business both by way of economies in production and distribution of goods.

**Joint-stock Concern means a capitalistic concern.** Joint-stock company and large scale production go together. It is not impossible for partnership business to be a large scale business but we always associate a joint-stock company with a large concern. Really speaking, it can safely be said that the joint-stock company is the most developed form of economic effort in our times. Production on colossal scale, which necessitates the employment of armies of wage-earners and enormous capital, and depends for its smooth and profitable running on highly specialised organising skill needed both in and out of the manufactures, has been realized by joint-stock companies.

In such concerns the specialization in the contribution of several factors of production is carried to its logical conclusion—far beyond what is found in partnership businesses.

**Its capital, undoubtedly the most important of factors, is accumulated in various ways.** The company is registered with the state to carry on certain kind of business with a maximum of working capital called the *Authorised Capital*. This amount is broken up into shares of any value thought fit by the business promoters,

and all or a part of these shares are offered to the general public for buying or, what is called, subscription. The public may be interested in the business of the company and may buy all the shares offered for sale or only a part of them. The amount of capital or the value of the shares, so taken up is called the *Subscribed Capital*. A company may have the authorized capital of, say, Rs.10 lakhs, yet it may think it best to start the business with a capital of about Rs.6 lakhs which will be open to subscription. This sum of Rs.6 lakhs will be its Subscribed Capital if the directors and share-holders between themselves take up the entire sum. (If shares worth Rs.4 lakhs have been subscribed, only this sum will represent the Subscribed Capital.) Suppose this capital is broken into 6,000 shares of Rs.100 each and all the shares have been applied for and allotted. The share-holders may not be called upon to pay for their shares in full, but to the extent of Rs.75 per share. The total amount thus called up and paid by the share-holders, that is Rs. 4,50,000, is called the *Paid-up Capital*. The un-paid-up balance of Rs.25 per share on 6,000 shares, that is Rs.1,50,000 is a kind of reserve which the

company is leaving with the share-holders to be called up when deemed necessary. The share-holders who contribute capital thus constitute a body that collectively owns the business. Every share-holder may call himself owner of the joint-stock company to the extent of the value of the shares he holds in that company.

If any time in future the company wants to borrow money it may do so on the security of its assets. Such loans are contracted by issuing *Debentures* which carry a fixed rate of interest. The debenture-holders thus become the creditors of the company and they should be distinguished from the share-holders or its proprietors.

**Risk is borne by the proprietors in strict relation to the kind and value of the shares bought by them.** The share-holders bear *limited liability*—liability limited to the unpaid-up portion of their shares only. If it comes to the worst to their company, the share-holders will be required to pay up the balance of Rs.25 per share not paid up so far, and no further.

The profit-sharing rights of the holders vary according to the kind of shares held by them.

*Preference shares* carry a fixed rate of in-

terest and enjoy the claim that if there is any profit made by the company, the holders of these shares must be paid up the interest first after meeting every expense or liability. If there is no profit or too little to pay fully the claims of preference shares, then alone their holders go without the whole or a part of their dues. There may be shares that enjoy *first* preference or *second* preference in the order of priority with which their claims are satisfied. Sometimes there may be *cumulative* preference shares, the claim on which is not lost if in a particular year no profits are made, but accumulates till all the arrears have been discharged. Thus there is little risk borne by such shares except when the company totally fails to earn any profits.

Next come the *Ordinary shares* dividend on which is decided by the general meeting of shareholders, and only after provision has been made for the payment of dividends on Preference shares of all varieties. The rate of dividend declared on Ordinary shares will usually be not less than such dividends allowed in preceding years nor less than the normal dividends being paid by other firms busy in the same type of business, as a lower rate of

dividend will depreciate the market value of such shares. Last come the *Deferred Shares*, on which dividend may be paid when every other claim on the income of the company has been satisfied. They thus take the greatest risk in the business.

Though capital holds a dominant position among the factors of production in a joint-stock company, the *importance of labour is also great*. Division of labour and its specialization is taken advantage of by entrusting to *directors* the task of deciding the broad lines of policy and administering the business as a whole. Actual management is done by managers—salaried organizers—who are employed by the directors on behalf of the company.

Labour, of course, is supplied by the wage-earners who have usually no other interest in the business except working for a number of hours and qualifying for the wages. Sometimes they are given bonus—a share in the profits of the company if the business has been particularly prosperous.

Thus in a joint stock company, Land is supplied by Landlords, Capital by Share-holders and Debenture-holders, Labour by employed Wage-



earnings, Organization by Directors and Managers and Enterprise by Share-holders.

**Success of joint-stock movement has been astounding.** It was left to this movement to bring together vast quantities of the several factors and make the large scale production a paying possibility. The limited liability system has encouraged even small investors to add their quota of capital to these companies which are more or less share-holders, each enjoying a vote in their bigger administrative problems. They have grown into successful and efficient units in production as they can afford to employ experts as managers and supervisors and highly trained and skilful hands as labourers, while the concentration of vast capital has enabled them to employ the latest and the best kind of machinery.

Yet, they have given rise to a bitter *conflict between the employers (capital) and the employed (labour)*. Usually the one motive with these concerns is the policy of profiteering on a big scale; it may be at the cost of the consumers who may be charged price much higher than the cost of production of the commodities or the labourers who may be paid wages much below the money value

of the marginal produce they add in production. The growth of consciousness and the sense of solidarity introduced among the labouring classes by trade union movement have led them to resent their exploitation by the employers and much hardship has resulted as a consequence of strikes and lock-outs that were resorted to in order to redress mutual grievances.

**Co-Partnership.** It is claimed that Co-Partnership business *retains all the advantages of joint-stock production and yet is free from its draw-backs.* To overcome the suspicion the labourers entertain of the motives of the employers, they are given representation on the board of directors. This step takes away from them their false sense of inferiority. The labourers may also be allowed to buy some shares of the company to plant in them a sense of pride of belonging to the class of proprietors of the company. These two steps have proved very successful in introducing an atmosphere of mutual confidence between the employers and the employees, and harmony in the working of the business. When the labourers or their representatives have equal opportunity with the employers in discussing the matters of

policy, technical production, disposal of the product, and appropriation of profits, they lose much of their suspicious grievances against the employers. There is introduced greater harmony in the relations between the two groups. At the same time when the labourers own some shares of the company, they begin to take keener interest in the smooth working and prosperous outcome of the business. If the business makes rich profits, they share it along with others. Really they gain doubly: they may get higher wages and also better dividends. If the business suffers a loss they share that risk and may also have to accept lower wages. There are thus brighter chances of smooth and steady management in co-partnership businesses.

**Co-operative Production.** Yet another system is production on co-operative basis. *Here all the factors of production are supplied by a group of people who become their own employers.* The distinction of being an employer and an employee is totally removed here and no ground for suspicion and strained feelings can exist.

Co-operative production has been given little trial, and even in such cases the measure of success achieved has not been encouraging. In the first

case, the scale of production must necessarily be a small one. Even then there is no surety that the suppliers of capital will also be efficient labourers. And lastly, co-operative production has suffered more from the absence of enterprising management which is a prominent feature of joint-stock companies which can afford to engage highly trained organisers.

## EXERCISES

1. Estimate the importance of single ownership businesses in the economic organization of a community? Is their organization an economic loss? Do they possess any advantages in taking special enterprises?
2. Individual ownership businesses, though less efficient last longer than partnerships. Why? What is there in partnership businesses to render them less stable though more efficient than the one-man businesses?
3. What are the stumbling blocks in the prosperity of partnership businesses? Is there any merit in the application of the principle of un-limited liability to such businesses?
4. What is limited liability? Has it any bearing

on the supply of capital required by large scale businesses?

5. 'Joint-stock companies represent a unit of production perfected by the long business experience of efficient organisers'. Do you agree with the statement?

6. What is a capitalistic concern? Does such a concern exist only to exploit labour to enrich the already prosperous section of the community? Support your answer with arguments.

7. 'Labour is blind, while capital is lame. Dis-united, they perish. In unity lies their strength.' Show that the Joint-stock companies provide the common ground for the display of united efficiency of both, rather than the arena for their conflicts.

8. Is it a fact that Joint-stock concerns enable people to undertake enterprise according to their choice and capacity?

9. Differentiate between Authorised capital and Paid-up capital, and give the sources of supply of capital to a Joint-stock company?

10. Distinguish between shares and debentures. Who are the owners of the company, the share-holders or the debenture-holders? Why?

11. If you were going to buy some shares of a company, will you prefer the Deferred shares or the

Preference shares? In what other ways could you invest money in a Joint-stock company?

12. Can you suggest any form of business management which while retaining the efficiency of production enjoyed by Joint-stock companies, does away with its evil? Do you consider it to be free from all shortcomings?

13. Enumerate the factors that have been responsible for the astounding success of Joint-stock companies. Is there any possibility of their place being taken by some other type of business management?

14. Which is better in the interest of economic development of the country—single ownership with small business or Joint-stock companies with large scale production?

15. Why is the Indian Government taking over the management of railways from the companies that have been controlling them till recently? Consider the problem from the points of view of efficiency of management and possibility of economic development of the country.

## EXCHANGE

### Chapter I

#### EXCHANGE BY BARTER

Under Exchange we study the lawful and voluntary activities of man whereby goods change hands. In this study we ignore dishonest means of transference of goods through swindling, theft and others. Exchange consists in changing the ownership of goods. It means a transfer of goods from a person to another person in lieu of the other person's goods. Thus in exchange there are two parties both of which willingly undertake to change a commodity which one possesses for the commodity the other offers. If A offers, out of his sweet will, his book on Logic to B in consideration for B's fountain pen, and B is also willing to have that book rather than keep his fountain pen, an exchange can take place. This exchange of a book on Logic and a fountain pen is an instance of exchange by barter.

**Gain in utility by exchange.** To see how exchange benefits both the parties at a bargain, let

it be assumed that there are two persons, one having eight skins and the other having eight arrows. Also, let them be named S and A respectively. S desires to have some arrows while A desires to have some skins, and they propose to barter one commodity for the other. If the satisfaction which S will get by receiving an arrow is more than the satisfaction that he will lose on parting with a skin, he will exchange; and similarly, A will be willing to part with his arrow for a skin only when the satisfaction got on receiving a skin will outweigh the satisfaction he will lose on parting with the arrow. Suppose they exchange a skin for an arrow. Will they exchange further?

S has eight skins and he parted with one of them. Now he has seven left with him. To him the utility of the seventh skin will be more than that of the eighth. On the other hand, now that he has got one arrow with him, the utility that he will expect to derive from the second arrow will be less than that of the first. Yet if the utility that he will gain by getting the second arrow is more than the utility he will lose on parting with the seventh skin, he will exchange. Similarly, if to A the utility of the second skin is more than the



utility of his seventh arrow, he will exchange. Thus exchange will continue till the satisfaction lost equals the satisfaction gained with either parties. It will proceed no further as then it will mean more satisfaction lost and less satisfaction gained.

To add definiteness to the above example, suppose the following schedule represents the utility of the successive skins to S and that of the arrows that he expects to receive from A, and the utility of successive arrows to A and that of the skins he expects to receive from S.

Units of skins or arrows	Utility of skins to S	Utility to S of arrows he ex- pects to receive	Utility of arrows to A	Utility of skins that A expects to receive
1	100	85	107	91
2	85	69	94	80
3	71	57	82	70
4	58	46	71	61
5	46	36	61	53
6	35	28	52	46
7	25	21	44	40
8	16	15	37	35

When S gives away one of his skins, he loses

16 units of utility, but by getting an arrow he secures 85 units of utility. The bargain is advantageous to him. A gives away 37 units of utility on parting with his arrow and gets 91 units of utility by securing a skin from S. The bargain is advantageous to A also. They will continue exchanging till S finds on comparison that on giving up the fourth skin he loses 46 units of utility, a loss which is just compensated by the fourth arrow he is getting to bring him 46 units of utility. Similarly, A gives up fourth arrow thereby losing 61 units of utility which is just compensated by the fourth skin he is getting to give him 61 units of utility. They will not go any further as it will mean a loss to both. To S fifth arrow means 36 units of utility for which he will be paying 58 units of utility by parting with the fifth skin counted from the bottom. Similarly to A, fifth skin will bring 53 units of utility but his fifth arrow will take away 71 units of utility.

Here exchange has been advantageous to both the parties. S has given up 4 skins with a total utility of  $16+25+35+46$  or 122 units and has secured 4 arrows with a total utility of  $85+69+57+46$  or 257 units, thus making a gain of  $257-122$

or 135 units of utility. On the other hand, A has exchanged 4 arrows measuring to him a total utility of  $37+44+52+61$  or 194 units for 4 skins of a total utility to him of  $91+80+70+61$  or 302 units, thus **gaining** to the extent of  $302-194$  or 108 units.

**The Conditions of Barter.** The above illustration brings out clearly the conditions which have to be fulfilled in any act of exchange by barter. Bringing together of two persons each requiring what the other can offer is essential. If S was not in need of arrows that A could offer, nor was A in need of skins that S was offering, no exchange would have been possible. For exchange to proceed **Double Coincidence** is essential.

After this double coincidence has been secured, the two parties have yet to compare the utility given up in parting with the article possessed by each and the utility got on receiving the article offered by the other. **If to each of them it means a net gain**, exchange takes place. Conversely, if an exchange has taken place, it should be understood that from the point of view of the exchanging parties it has been advantageous to both of them.

But to carry on exchange by barter was not an easy matter. It meant a lot of waste of time and a source of trouble to the exchanging parties, and sometimes a loss of utility to one of them.

**Difficulties in Exchange by Barter.** Exchange by barter has been called a phase of undeveloped community life, a characteristic of primitive economy. When people had no money commodity, exchange by barter was indispensable but nonetheless inconvenient. The conditions of barter themselves have been responsible for great inconvenience to people. One can imagine S carrying his skins on his shoulders and knocking about from door to door in search of a person who could offer him his arrows and at the same time would like to have his skins in exchange. What a waste of time and energy in bringing about this double coincidence!

Even if this difficulty of double coincidence was overcome, there was another. It was about settling the rate at which exchange will take place. They had no common article in terms of which each could measure the value of his respective goods to be exchanged. The only way, though, indefinite was the subjective consideration

of the utility gained and the utility lost on getting, say, so many arrows and on parting with so many skins for them. Suppose they decided to exchange three skins for five arrows, some exchange could take place. But it was not always easy to fix a rate. Sometimes it was impossible to fix any rate of exchange. If one of the parties had only one unit of an article of great utility, and wanted in exchange for that thing several units of an article of a low utility, e.g., a deer to be exchanged for arrows, a rate was out of question. The person possessing the deer could not compare its marginal utility with the utility he expected to derive from successive arrows.

Last of all came the greatest of all the difficulties faced by a person who had, say, a cow and wanted in exchange for it a dozen of arrows, a mat, some fruits, and an article of dress. How was it possible for him to come across one who could supply him all his requirements? If one such person could not be found, two or more could not serve the purpose by jointly meeting his requirements as all of them could not keep the same cow at the same time. Supposing he found out another person who could offer him all he wanted; there

was nothing to ensure that the owner of the cow got at least as much utility as he lost in the transaction. If he calculated the total utility of all the articles received to be equal to three-fourths of the utility of the cow, he could not possibly keep back a quarter for himself. Thus exchange by barter involved a loss of labour and time and sometimes a loss of value to a party. These difficulties have been removed by the introduction of money.

**Sale and Purchase.** If money is used as a means of exchange, that is, goods are exchanged for money rather than for other goods, the transaction is called sale and purchase. If a maund of wheat is given for a fountain pen, it is an exchange by barter; if a sum of five rupees is paid for the fountain pen, it is an exchange by sale and purchase.

Sale and purchase are only two sides of the same transaction. The stationer parts with his fountain pen for five rupees and he is said to be selling it; the student parts with five rupees for the fountain pen and he is purchasing it. Apart from the fact that in sale and purchase, money is used as one of the commodities, the nature of the transaction is identical with that of barter, *the*

*rate of exchange being decided on comparison of the marginal utilities of the commodities.*

## EXERCISES

1. How does exchange arise? Do both the parties gain in utility by exchange?

2. What is barter? Explain the conditions in which barter is possible. Does this system still prevail in the locality from which you come?

3. What are the inconveniences which barter gives rise to? How are they got over?

4. Point out, giving reasons for your answer, mistakes in the following answer of a student:

"A has apples and B has bananas. They agree to exchange an apple for two bananas. In the table given below are scheduled the marginal utilities which each party gets from them.

To A	additional utility				
of every apple.	100	95	80	60	35
of every two bananas	110	100	85	65	36

To B	additional utility				
of every two bananas	85	80	72	62	45
of every apple	90	86	80	70	43

Since in the first instance A will lose 100 units of utility and gain 110 units of utility, he will be quite

willing to make the exchange. B will lose 90 to gain 85 units of satisfaction, he also will gladly exchange. Thus exchange will continue so long as both parties continue to gain."

Do you think the exchange would not have proceeded if the first two bananas had given only 80 and not 110 units of satisfaction to A?



## Chapter II

### VALUE

In barter, or sale and purchase either a commodity or money is handed over for another commodity. There is no other form of exchange recognised in civilized society if no such transference of goods from both the sides takes place. But why must it be so essential that a desired article cannot be had unless some other article almost as much desired, be sacrificed for it? It is just because the desired article is possessed by another individual who would not like to part with it unless he is compensated for this loss. But why should he possess it at all or why should an individual be so anxious to have it for himself even at the sacrifice of some other article? The reason is that the article has *value* both to the individual who possesses it and also to the other who wants to possess it.

By value of a commodity is meant the power of its being exchanged for other commodities. It is measured by the quantities of other commodities that can be exchanged for it. The value of a

commodity can be expressed in terms of every other commodity for which it can at all be exchanged. For instance, the value of a fountain pen may be a ton of coal, two tea-tables, three hats, four shirts, five days' board and lodging in a hotel, and so on. But the best way to measure it is in terms of money because through money it can be expressed *concisely* in general purchasing power. It can, for example, be said that the value of the fountain pen is Rs.10.

When the value of a commodity is expressed in money, as above, it is called its *price*.

The usual way of referring to the price of an article is to state the number of units or quantity of that article that can be exchanged for a unit of money. If 10 seers of wheat is exchanged for one rupee, it should be said that the price of 10 seers of wheat is one rupee, not that the price of wheat is 10 seers a rupee. Another way in which price is expressed is to state a big number or quantity of an article along with the amount of money for which it can be had. For instance, it can be said that the price of a maund of wheat is Rs.4, or the price of a dozen of fountain pens is Rs.120.

If the value of goods is expressed in terms of

money, the value of money too can be expressed in terms of goods. In exchange the relation between the articles changed is reciprocal. If the value of 10 seers of wheat can be expressed by one rupee, the value of one rupee also can be measured by 10 seers of wheat.

**Value and Total utility.** Value of a commodity does not depend upon its total utility. None can deny that the total utility of a tumbler of water is great, much greater than that of a fountain pen. But while the fountain pen has such a high value as to be exchanged for the commodities enumerated in the preceding paragraphs, the value of a tumbler of water is almost nil. But it should not be inferred that an article can acquire value without possessing any utility or want-satisfying power. If it has no utility, none would care to desire it and make some sacrifice for it. It is, however, true that some commodities have disproportionately high values as compared to others, and at the same time very low utility. Diamonds are useful for show of wealth or class distinction, and in addition they may be used in cutting the glass or killing a person—a low utility indeed; but they have enormous value. Thousands of carpenter's

tools can be bought for a good sized diamond though the tools prepare many times really more useful things than the diamond itself. Again, a pair of spectacles, that do not fit a person, are not value-less to him. They may not be useful as spectacles for improving his vision, but surely they can be exchanged for other commodities and thus possess good value in them.

**Value and Marginal utility.** The value of a commodity depends upon its marginal utility. Those articles that are available in greater quantities have a lower marginal utility compared to those articles that are not so plentiful. Or, to express the same truth in another way, an article that is more scarce is more valuable than another article that is less scarce. *By scarcity is meant lower supply in relation to demand.* Any thing whose demand is greater than its supply is said to be scarce. Gold is more valuable than silver because the stock of gold in the world is smaller than that of silver, and thus the marginal utility of gold is more than that of silver. If tomorrow very rich gold mines be discovered and worked and silver mines be exhausted or their working stopped somehow, the value of gold will fall and that of silver

rise. If such conditions continue for a long time so that silver becomes more scarce than gold, silver will come to possess higher value and gold lower one. In times of famines wheat sells at a higher price i.e., has greater value, not because wheat in famine years is more nourishing but because it is scarce.

This shows that the commodities have value as they are scarce. If a commodity could be had as freely as air we breathe, it will lose its value. Yet it is still to be found out why an article possesses a certain value, no less and no more. Why should a fountain pen be exchanged for Rs.10 and not for Rs.16; nor for Rs.6? This problem leads us to the determination of prices and the factors that govern them.

### EXERCISES

1. Define value.

"There can be no general rise in values and no general fall in values." Explain and illustrate.

2. Distinguish between the value and the price of a commodity.

"When the price of wheat changes from 8

seers to 16 seers a rupee it is said to be doubled." Comment on the statement.

3. Is there any difference between 'value-in-use' and 'value-in-exchange'? How is the one related to the other?

4. Define *scarcity*. If there is one dry well in the village, can it be said to be scarce? How far is it correct to say that rotten eggs are scarce these days?

5. Does value depend upon utility? Examine the following cases critically:

(a) No body can deny that air has the greatest utility to man, but it scarcely commands any value. Hence value has nothing to do with utility.

(b) A cap may have great value, but it has little utility to a Bengali. Evidently, therefore, utility and value seem to have no relation.

(c) The marginal utility of a rupee is much greater to a poor man than to a rich man, but both purchase the same quantity of wheat with it in the market on a particular day. Their utilities differ but their values do not. How can utility then be said to have any effect on value?

## Chapter III

### DEMAND

Demand is the amount of a commodity which a person is willing to buy at a given price. If a man is willing to buy 30 seers of wheat at 10 seers a rupee, his demand is 30 seers of wheat at that rate. In expressing a demand both the quantity of a commodity and the price which the buyer is offering should be mentioned. There is no demand without price.

If, suppose, a person demands a dozen of mangoes at 2 pice each, it may be asked why he is going in for mangoes at this price. The reason is that he prefers to buy them at this price rather than anything else. He may not be conscious of this preference, but his demand for mangoes depends on his demand for every other commodity that he can possibly buy. On comparison he finds that just now it is better for him to go in for mangoes at two pice each and buy a dozen of them than spend that money on any other commodity. It means that whenever an individual demands an article at a certain price, he has compared or

balanced this particular demand with alternative demands for other commodities, and finally decided in favour of the present commodity. And in this preference he is guided by the present price of the commodity.

**The Law of Demand.** If the price of the mangoes were three pice each, will he buy a dozen? Obviously not. Now that he has to pay a higher price, he may decide to spend a part of his money on some alternative use and at the same time may like to buy mangoes though not as many as before. And if they get cheaper, he may buy a score of them as he will prefer to spend his money in this way rather than in any other, as on the whole this expenditure promises to be more to his interest. But certainly the quantity demanded will not go on increasing if the price falls very low. If they were selling at one pice a dozen, no one would think of spending about four or five annas, as the number of mangoes will be too large and not even worth the trouble of eating. At the same time if the price were as high as two rupees a dozen, he might find them much beyond his means and buy none of them.

The greater is the price demanded, the greater



is the loss of total utility in parting with the money as price. This can be equalised or offset by making the purchase of a smaller quantity because less quantity bought means greater marginal utility of the commodity. If eight mangoes are bought at three pice each, the marginal utility of eight mangoes to the purchaser is just worth three pice. If price rises to four pice, the marginal utility of mangoes must rise before the buyer thinks it worth his while to go in for them at four pice each. And the marginal utility will rise only when fewer, say five, mangoes are bought. The marginal utility of five mangoes is higher than that of eight of them. If price falls, the buyer will be a gainer when he increases his purchase and brings down the marginal utility to the level of the reduced price.

The substance of the above discussion can be stated in a general form thus: The quantity demanded rises with a fall and decreases with a rise in the price of a commodity, other things remaining constant. This is the law of demand. The phrase 'other things being equal' means that prices of all other commodities do not change and therefore do not affect his demand in any way. It also

means that the money at his disposal neither increases nor decreases and that his taste for the commodity is not altered.

**Demand Schedule.** If a list is prepared of the different quantities of a commodity which will be bought at different prices, or of different prices at which different quantities of that commodity will be bought, we get a demand schedule. Below is given the demand schedule of a rich man for mangoes as it stood in the fruit market of Lucknow on Wednesday, July 5, 1933 at 10 A.M. Time and price are mentioned in giving the demand schedule because the demand of a man for a commodity in a place and at a time will not remain the same with a change in his circumstances.

## DEMAND SCHEDULE

Price	Demand
12 annas	7 doz. of mangoes
11 "	9 " "
10 "	12 " "
9 "	16 " "
8 "	21 " "
7 "	27 " "
6 "	34 " "
5 "	41 " "
4 "	51 " "
3 "	66 " "

This demand schedule can be read in two ways. In the first place, it may be said that if the price were 12 annas a dozen, the man would buy only 7 dozens; if the price were 11 annas a dozen, he would buy 9 dozens; and so on. In the second place, it may be said that for 7 dozens of mangoes he will not offer a price more than 12 annas a dozen; for 9 dozens he will not offer a price more than 11 annas a dozen; and so on.

**Collective or Social Demand, or Demand in a market.** All the purchasers of a commodity in a market do not belong to the same economic class. Some of them are rich with plenty of money at their disposal, while others are poor with narrow means. The amount of money being great in the possession of the rich, the marginal utility of money to them is lower than it is to the poorer people who possess a much smaller quantity. Therefore if any article enters into the consumption of both the rich and the poor people, the rich are able to pay higher prices for the same commodity and also buy greater quantities of it than what the poorer people can pay or what they can buy.

Suppose there are three classes of people in a certain market and their economic condition is denoted by calling them the rich, the middle-class, and the poor. Let them be represented by A, B and C. If the mangoes sell at one rupee a dozen, suppose A buys two dozens, B buys only one dozen because to him the marginal utility of money is greater than what it is to A. We take it for granted that the taste and the capacity to enjoy the mangoes possessed by all the buyers are the same. C being a poor man, he does not buy any mangoes at this price because to him the utility of mangoes at this price is much higher than the utility of the mangoes themselves. The same holds good for him even when the price comes down to 13 annas per dozen. It is only at 9 annas that he can afford to buy one dozen. Arguing on similar lines, if a demand schedule is prepared for all of them singly and collectively, it will read as under:

Price per doz.	A's demand in doz.	B's demand in doz.	C's demand in doz.	Total demand in doz.
16 annas	2	1	0	3
13 "	3	2	0	5
9 "	5	4	1	10
7 "	8	6	3	17
5 "	12	9	5	26
3 "	15	13	8	36

If in the market there are 100 such rich men as A, 250 such middle-class men as B, and 400 such poor men as C, then the demand schedule of the whole market will read as follows:

Price per doz.	A's demand in doz.	Demand of 100 such men	B's demand in doz.	Demand of 250 such men	C's demand in doz.	Demand of 400 such men	Demand of entire market
16 as.	2	200	1	250	0	0	450
13 "	3	300	2	500	0	0	800
9 "	5	500	4	1000	1	400	1900
7 "	8	800	6	1500	3	1200	3500
5 "	12	1200	9	2250	5	2000	5450
3 "	15	1500	13	3250	8	3200	7950

### EXERCISES

1. Define 'Demand' and 'Demand Schedule.' Is effective desire the same thing as demand? How do you distinguish between want and demand?
2. Explain the following statements:
  - (a) The demand price for a given quantity of a commodity is governed by the marginal utility of that commodity.

(b) " . . . . . the more one spends on one thing, the less one has to spend on other things. If a man is furnishing a room, the number of chairs he buys is not only determined by the fact that more than four or five would hardly ever be used, but also by the fact that he has to buy a table and a carpet."

3. Is the law of demand derived from the law of diminishing utility?

"If price rises, demand diminishes, but if demand diminishes price falls. It is difficult to see how price ever changes." Solve the difficulty.

4. State the law of demand. Do you agree with the following statements? Give reasons for your answer.

(a) The law of demand states that as price rises, demand falls and *vice versa*.

(b) According to the law of demand, price increases or decreases according as demand descends or ascends.

5. Prepare an imaginary demand schedule for sugar for a market of 500 buyers.

Compare an individual's demand schedule with the social demand schedule.

6. Does demand vary with price?

"The law of demand tells us that with every increase in price the demand falls and with every decrease in it the demand rises, other things remaining the same." Point out the significance of 'other things remaining the same.'

## Chapter IV

### ELASTICITY OF DEMAND

It has already been pointed out that the quantity of a commodity demanded varies inversely as the price, that is, if the price of the commodity rises, the quantity demanded falls, and if the price falls, the quantity demanded rises. Demand responds one way or the other to a change in the price. This responsiveness in demand following a change in price is called *elasticity of demand*. Since every change in the price is accompanied by a change in the demand, no matter however little, demand for every commodity is said to be elastic. There are certain commodities, the demand for which is more sensitive to a change in price than the demand for other commodities at the same change in their prices and therefore the former commodities are said to have a more elastic demand than the latter ones.

When early mangoes are received in the market, they sell at a high price. The high price finds but a few purchasers for them. Only those who can afford to pay high prices come forward



to buy them; the poorer purchasers are prevented from enjoying them. But as more and more mangoes pour in the market, the price is brought down; this lowering of the price enables many more consumers to purchase them and also stimulates the demand of almost every one of the old consumers. Thus with a fall in price demand is greatly increased. If the demand adjusts itself in such a way that the total money spent on the commodity by the consumers remains unaltered, demand is said to have elasticity equal to unity. A hypothetical example given below illustrates this.

Demand schedule of a certain class of people of Lucknow for mangoes on Tuesday, August 1, 1933.

Price	Quantity	Total expenditure
8 pice each	1,200	9,600 Pice
7 " "	1,500	10,500 "
6 " "	1,900	11,400 "
5 " "	2,400	12,000 "
4 " "	3,000	12,000 "
3 " "	3,600	10,800 "
2 " "	5,000	10,000 "
1 " "	9,250	9,250 "

Taking 5 pice as the starting price, the demand at this price is 2,400 mangoes, and the

total expenditure is 12,000 pice. When the price goes down to 4 pice each, the number of mangoes demanded goes up to 3,000, but the total expenditure remains unaltered at 12,000 pice. Under such circumstances demand is said to possess elasticity equal to unity. The same is true, if the starting price be supposed to be four pice and the new demand at five pice considered to fall from 3,000 mangoes to 2,400.

When the price is as high as 8 pice each, the demand stands at 1,200. It is lower than the demand 3,000 which corresponds to the price, 4 pice each. It may be noted that with doubling of the price, the demand is not cut in half, for if it were so the demand would be 1,500 at the price 8. The demand at 8 pice is less than 1,500, which means that with the doubling of the price the demand has decreased more than proportionately. It shows that the demand has a high degree of sensibility. Again, when the price falls from 8 pice to 7 pice, the demand rises from 1,200 to 1,500 and with it the total expenditure increases from 9,600 to 10,500 pice. This means that in spite of a fall in the price per unit of the article, people are spending more money on the article than before.

Here again a high degree of responsiveness in demand is visible. The same tendency is noticeable when the price further falls to 6 pice each. In all these cases the total expenditure varies inversely as the price, that is to say, the expenditure increases with a fall in price and diminishes with a rise in price. When such is the case, the elasticity of demand is said to be greater than unity.

In our demand schedule, as the price falls from 4 pice, the demand increases. It stands at 3,600 when the price is 3 pice; at 5,000 when the price is 2 pice; and at 9,250 when the price is 1 pice. With the fall in the price from 4 to 2 pice, the demand expands from 3,000 to 5,000. It is not doubled when the price is halved. It is less than doubled. It stands at 5,000, a figure lower than 6,000 which is double of the quantity 3,000. The demand in this case, therefore, is not so responsive as in the previous case. Similarly, when the price is reduced from 2 to 1 pice, the demand is less than doubled. In both these cases it will be noticed that when the price falls the total expenditure also falls; the total expenditure varies directly with the price. If the price be considered to be rising from 1 to 2 pice, demand will have to be

looked upon as changing from 9,250 to 5,000 and with it the total expenditure as changing from 9,250 to 10,000. The total expenditure again varies directly with the price. When the price and the total expenditure are so related to each other, the elasticity of demand is said to be less than unity.

To sum up, three distinct rules can be formulated to measure the elasticity of demand.

1. The elasticity of demand is equal to **unity** when the *total expenditure* remains *constant* even if price changes.

2. Elasticity of demand is **greater than unity** when the *total expenditure* *varies inversely as the price*, that is to say, rises with a fall in price and falls with a rise in price.

3. Elasticity of demand is **less than unity** when the *total expenditure* *varies directly with the price*, that is to say, rises with a rise in price and falls with a fall in price.

#### **Elasticity of demand for necessities.**

Mangoes cannot be regarded as necessities of life like air and water. These articles in spite of being indispensable for life, have no market value, for they can be had in any quantity. Most of us, therefore, do not realise how high a price we may

be required to pay for them if they become scarce and come to acquire value. Such a feeling arises in case of only those commodities which are bought and sold in the market and have come to occupy a place of great importance in our daily consumption. The example of salt is quite familiar to us. It is an article that cannot be dispensed with. Salt is a necessity. Let us see how total expenditure of this commodity will behave with certain changes in its price.

A certain quantity of salt is consumed both by rich and poor people. It must be bought whether its price is high or low. If its price is high, only as much will be bought as is really necessary. If its price is low, a little more of it may be in demand, but not very much more because no more than a certain quantity of it can possibly be consumed by a person. Hence the demand for salt varies within fixed limits as a result of changes in its price. There is the lower limit below which the demand will not go, no matter how high the price of salt may be; there is the upper limit beyond which the demand will not move even if the price is very low. Suppose these limits for a certain individual are 12 chhataks and 1 seer respectively at

prices 2 annas and 1 anna a seer. He will demand 12 chhataks of salt even if the price gets to more than 2 annas a seer. In that case the total expenditure will increase with an increase in the price. It will, in fact, be directly proportional to the price, that is, if the price is doubled the expenditure too will be doubled. Similarly, if salt is to be had for nothing, no more than a seer will be demanded by the individual. Hence the total expenditure will be lowered as the price is lowered. If the price is cut in half, the total expenditure will also be reduced to half. This means that beyond the two limits the total expenditure will vary directly with the price; and for that reason it can rightly be said that the elasticity of its demand will be less than unity. The same will hold good with all commodities that behave as necessities either for the time being or for a particular individual, or at a particular place. The elasticity of their demand will thus be less than unity. One point, however, must be noted in this connection, and it is that whereas salt has no substitute, other commodities of consumption may have some. For example, wheat can be substituted by gram or jowar or bajra or rice, if its price becomes too high. But that does not lead to the con-

clusions other than those already drawn for necessities. So long as wheat acts as a necessity the upper and lower limits of demand must exist and the total expenditure must behave as it did in the case of salt. If gram is substituted for wheat, there must occur the upper and lower limits for gram also which will give similar results as salt does, about the total expenditure incurred on it. Hence it would be no mistake to say that all necessities have the elasticity of their demand, which is less than unity.

**Elasticity of demand for comforts and luxuries.** To this may be added the list of those commodities which cannot be considered as necessities from any point of view. They are not necessary either for life or for efficiency or by convention. Their consumption can be postponed if the price is excessively high, or it may be increased much if the price is very low. Take the case of the soap cakes. None at all may be demanded if they are selling very dear. A great many of them may be purchased for use if they are selling very cheap. Neck-ties, wrist watches, fountain pens and many other articles of fashion fall in the category of soap cakes. Rare articles such as coins

and stamps also sometimes behave in the same manner, and out-of-season articles like mangoes in winter, have a similar nature. The changes in demand for all such articles are so great and varied as a result of variations in their prices that the total expenditure incurred upon them increases greatly with every fall in price and decreases with every rise in price. To illustrate this, let us suppose that a student is willing to buy 6 neck-ties when they are selling at eight rupees a dozen. When the price is doubled, he may not care to buy even three of them, although he may have the same amount of money, Rs.4 to spare for the ties. The reason for so doing is that the ties are not among those commodities that are indispensable. One can go without them if the price is exorbitant. To have six of them at double the price will mean double the expenditure which will not be desirable because the consumer's income is fixed and he is unable to reduce his expenditure on other commodities to any appreciable extent. To have less than six but more than three will require an expenditure in excess of Rs.4 which may not be available for reasons already mentioned. To have only three will not surely involve any extra expenditure, but



it will be worth while asking how far an expenditure of even Rs.4 at that rate is advisable. The expenditure can be defended only when the demand for ties is so strong that no less than three of them will serve the purpose. Such a demand is hardly possible unless the habitual use of the ties prescribes the absolute necessity of at least three ties. Under ordinary circumstances a price of Rs.16 per dozen cannot but lower the demand below three, and the expenditure below Rs.4.

That being so, the total expenditure on un-necessaries is reduced as their prices increase. Similarly, it can be shown that the total expenditure on them is increased if the prices are decreased. In other words, the total expenditure on un-necessaries varies inversely as their prices. Therefore the elasticity of their demand is necessarily greater than unity. Un-necessaries, however, include comforts and luxuries both. But comforts are neither necessities nor luxuries. They occupy an intermediate position between the two. Hence if the elasticity of demand for necessities is less than unity and that for luxuries greater than unity, the elasticity of demand for comforts must be taken to be equal to unity.

## EXERCISES

1. Define *elasticity of demand*. Distinguish between elastic and inelastic demand, and give examples of each.

2. When is the elasticity of demand said to be equal to unity? Illustrate your answer by a numerical example.

3. Find out which of the following commodities is a necessity, a comfort, or a luxury. Give reasons.

## Quantities demanded of the commodities

Price	X	Y	Z
4	3	2	4
3	4	5	5
2	6	9	7
1	12	20	11

4. State how you measure the elasticity of demand for a commodity. Take the examples of wheat and motor cars to illustrate your answer.

5. Explain the following:

"The elasticity of demand is great for high prices, and great or at least considerable, for medium prices; but it declines as the

price falls, and gradually fades away if the demand goes so far that satiety level is reached."

6. Comment on the following statements:

- (a) If a small change in price is followed by a great change in demand, the demand is said to be elastic. But if there is no change in demand with a change in price, the demand is said to be inelastic.
- (b) If the total expenditure increases, the elasticity of demand is less than unity; but if it decreases, the elasticity of demand is greater than unity.

7. How far do you agree with the following statements?

- (a) "A commodity is said to have an inelastic demand, when its demand remains more or less unaffected even though there may be great fluctuations in its price."
- (b) "The elasticity of demand varies with all the factors which affect the law of diminishing utility, viz., the individual, the unit, the time, the place, and his income. It also varies with the nature of the commodity and its price."

- (c) "There is, however, no commodity which has perfectly inelastic demand, and hence in practical discussions we have to abandon the use of this phrase and speak, instead, of the demand being more or less elastic."

8. "The successive reductions in duty on salt have led to a largely increased consumption. Hence even salt in India has some elasticity." Is it salt that has elasticity, or the demand for it? When is salt said to have elastic demand?

9.	Price	Demand
	4	20
	5	16

A rise in price from 4 to 5 means an increase of 25 per cent. A fall from 20 to 16 in demand means a decrease of 20 per cent. In the above demand schedule percentage change in price is greater than percentage change in demand. Hence demand shows poor responsiveness and is, therefore, inelastic.

Calculate the elasticity of demand on the basis of total expenditure also. Do you not get the same results? If not, why not?

10. Measure the elasticity of demand

- (a) for wine (1) to a drunkard, (2) to a coolie;
- (b) for water;
- (c) for candles.

## Chapter V

### SUPPLY

Just as there can be no demand without price, so there can be no supply without price. It is inaccurate to express the supply of mangoes offered by a stall-keeper by saying that he is willing to sell five dozens of mangoes. He is not selling for nothing. He sells mangoes only when he is paid their price which is a kind of inducement given to persuade him to part with his fruits. If no such inducement is given him, he will not sell mangoes. Therefore when he sells or offers fifty-five dozens of mangoes, he does so because he receives certain price for them. Suppose on this occasion the mangoes are selling at nine annas per dozen. It should be understood, therefore, that as far as this fruit-seller is concerned, he supplies fifty-five dozens of mangoes at nine annas per dozen.

**The law of supply.** Had the price been different, would he have even then supplied fifty-five dozens of mangoes? If the price were, suppose, twelve annas a dozen, the fruit-seller must have felt a stronger inducement and hence his desire to

benefit more at this high price would have been keener to sell more of his mangoes. His anxiety may have been as great as to induce him to sell sixty-one dozens of them. If the price had been still higher, say one rupee a dozen, he would have gladly offered his entire stock of hundred dozens and at the same time felt sorry that he had no more to sell.

On the contrary, if the price had been a bit lower, at seven annas rather than at nine annas per dozen, he would not have felt so encouraged and offered only forty-seven dozens of them. At a still lower price of five annas, let us suppose he would offer only thirty-six dozens; and if the price falls still further to one anna per dozen, he would have refused to sell any as the transaction would have been a source of great loss to him.

It is evident from the stall-keeper's behaviour that when the price rises, in order to make the best of the favourable circumstances, he offers greater quantity as this line of action promises him handsome returns; and when the price falls, he reduces the supply of mangoes to avoid suffering greater losses. And in this matter he is not unique, but illustrates the behaviour of sellers of commodities

in general. Every seller of any commodity is ready to offer greater quantities of it if the price rises, and is prudent enough to offer less if the price falls. This tendency of the quantity of a commodity offered for sale to rise and fall with a rise or fall in its price is summed up in the law of supply which may be stated thus:

With a rise in the price of a commodity its quantity supplied increases; while with a fall in its price the quantity supplied diminishes.

**Stock and Supply.** In the illustration of the fruit-seller, it has been noted that if mangoes were selling at one rupee a dozen, he would have gladly supplied all the hundred dozens that he had in the stock. At prices lower than this, he does not feel willing to exhaust his entire stock. It shows that except at one rupee a dozen, the actual number of mangoes offered, that is, supply is less than the total number of mangoes that he can possibly offer to sell on that day. With a fall in price the supply goes on diminishing, but that does not show that the stock is running down. When the price drops down to one anna a dozen, no mangoes are supplied, that is, the supply is nil, but the stock should not be supposed to have vanished. The



fruit-seller brought hundred dozens of mangoes to his stall that day. That was his stock, the maximum supply that he could offer at the highest price he expected, and it happened to be one rupee a dozen as seen above. The actual number offered at a certain price is called the supply at that price. Every seller keeps extra quantities of a commodity in the stock out of which to sell only if the price so warrants.

**Supply Schedule.** Supply schedule may be said to be a list of prices at which different quantities of a commodity are offered for sale, or it may be said to be a record of different quantities of a commodity that are supplied at different prices. The supply schedule of the fruit-seller discussed above will read as under:

Supply schedule of the fruit-seller for mangoes in the Lucknow fruit market, as it stood on Wednesday, July 5, 1933 at 10 A.M.

Price	Supply
12 annas	61 doz. of mangoes
11 "	60 " "
10 "	58 " "
9 "	55 " "
8 "	51 " "
7 "	47 " "
6 "	42 " "
5 "	36 " "
4 "	29 " "
3 "	19 " "

**Expenses of production.** The supply schedule of the fruit-seller on a particular day shows that he ceases to offer any mangoes when the price comes down to one anna per dozen and offers to sell only thirty-six dozens of them at five annas per dozen. In this case too his willingness to sell is rather little. Why is it that at five annas per dozen he does not feel ready to sell more than thirty-six dozens, and at one anna he thinks it worth his while to refuse selling any? This means that there is a limit of prices below which he will not ordinarily sell his usual quantity; and another limit below which he will not sell at all. It will be shown in the following pages of this chapter how these limits are fixed.

**Cost of production.** The stall-keeper does not get the mangoes for nothing; he grows them in the garden that he hires from a rich owner in the locality. The rent that he pays for it for the season is Rs. 100. Along with other members of his family he lives in the garden to look after it. He employs a watchman to help him in his rounds at night, and a cartman to carry his mangoes from the garden to his stall in the market. He uses baskets, sacks, straw, bamboos, and slings in pluck-

ing, ripening and storing mangoes. In the town he has rented a stall at Rs.5 a month, and pays As. 8 a month as municipal taxes. In the entire business he has employed Rs.500 of which he has borrowed Rs. 100 from a money-lender at 9 per cent per annum for four months of the mango season. The net average yield of the garden is 1,000 dozens of mangoes per season, and the mango-seller expects this harvest to be usually good. Let us see what is the cost of mangoes to him.

List A given below comprises the money payments he has to make to outsiders for any kind of contributions they make in the production of the mango harvest. List B contains the items which the stall-keeper contributes along with the members of the family, and for which he deserves remuneration. The accounts given below have been prepared for the period of four months.

## LIST A

	Rs.
1. Rent of the garden	100
2. Rent of the shop at Rs.5 per month	20
3. Interest on Rs.100 borrowed at 9 per cent	3
4. Wear and tear on his capital goods	1

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	Rs.
5. Wages of the watchman at Rs.5 a month	20
6. Wages of the cartman (transport on the contract basis)	9
7. Municipal taxes at As. 8 a month	2
	<hr/>
Total money payment	155
	<hr/>

These money payments which the gardener makes to others for various kinds of services rendered to him, constitute the *expenses of production*.

LIST B

	Rs.
1. Interest on his own capital calculated at the rate of interest charged on borrowed capital	12
2. Wages for his personal labour and the help of the family	83
	<hr/>
Total	95
	<hr/>

If he had lent his capital of Rs.400 to somebody else, he would have earned Rs.12 as interest in four months. The remuneration for his labour and that of his family is calculated at Rs.83, as last year the family received this payment when they

were working in the garden of another fruit-seller. This sum of Rs.95 he should normally get for the contribution of his capital and labour. This remuneration for the contribution of the producer himself, here the fruit-seller, is called Normal Profits.

Thus the minimum price that he should realise from the sale of 1,000 dozens of mangoes comes to  $\text{Rs.}155 + \text{Rs.}95$  or  $\text{Rs.}250$ . It is the sum-total of the expenses of production and the normal profits and therefore is the cost of production of the mangoes. On this basis the average money cost per dozen comes to 4 annas. The supply of 1,000 dozens is the supply of the entire season. Apart from the opening and the end of the season, the out-put of mangoes from his garden is 12 dozens a day.

Now we are in a position to answer the question whether there is a price which is too low for our stall-keeper at which to sell any mangoes. Usually he will not sell mangoes below 4 As. per dozen, yet at times it may be fit to sell a dozen or two at a price below this level. If he does so, he will do it either out of regard for a permanent customer, or to oblige and win a new customer

who on that day happened to visit his shop, or because he expects to charge higher prices later on to compensate himself for the low prices of that day. At five annas a dozen he sells thirty-six dozens as the profit is rather low—five annas less 4 As. per dozen—and prefers to keep the stock rather than sell it away. At three annas he sells merely nineteen dozens, but does sell some even though the cost per dozen comes 4 As. Now, the two items of the cost of production of mangoes are the expenses of production and the normal profits. The expenses of production per dozen average at  $2\frac{1}{2}$  As. and the normal profits at  $1\frac{1}{2}$  As. When he sells a dozen for three annas, he realizes his *expenses* in full, but only  $\frac{1}{2}$  anna towards his normal profits. The expenses of production represent money that he has actually paid to others, and it is the least that he must get by way of prices before he will sell any at all. This is the reason why at one anna a dozen the stall-keeper closes his shop for the day and walks away home. He does not mind foregoing a part of normal profits as he argues that rather than not selling at all and realising neither the expenses nor the normal profits, it is better to realise the first in full

and the latter only in part if the whole of it cannot be realised for the time being. But it is for the time being only, as he expects the price to go much higher and compensate him for the present low price. If he apprehends the prices to remain at this low level for the season and later on also, he will give up this business and take up another as in that case he will get at least his normal profits if no extra.

That is why the stall-keeper offers more when price rises above his cost of production, and less if it falls; but ceases to offer any when it goes below the expenses of production.

### EXERCISES

1. Define 'supply' and 'supply schedule.' Illustrate your answer by numerical examples.
2. 'Supply varies directly with price.' Explain. Discuss the relation between price and the cost of production.
3. What are normal profits? How are they affected by changes in price?
4. State the law of supply. Is it true for all persons, all commodities, and all times? Illustrate.
5. Distinguish between 'supply' and 'stock', and estimate the practical importance of this distinction.
6. Analyse the cost of production of any commodity you may be interested in.

## Chapter VI

### BALANCING OF DEMAND AND SUPPLY

**How price is determined in a local market.** In a market there are many buyers and many sellers. Each of the buyers tries to pay the least possible price that he can manage to pay, while the seller tries to charge as much as he possibly can and sell as much of the commodity at that price as he can manage. All this introduces higgling and bargaining, and competition which becomes more complicated as the number of buyers and sellers increases. To understand how a certain price will come to reign in a market where the number of buyers and sellers is usually great let it be supposed that, to start with, there is only one buyer and only one seller and the commodity in question is mangoes.

Let A be the buyer and P the seller with hundred dozens of mangoes to sell. The price that A will pay will depend on the utility he expects to derive from the consumption of mangoes. Suppose he decides that his desire to consume mangoes is so great that he would gladly pay one rupee for the



hundred dozens of mangoes rather than go without them. Yet more than a rupee he will not pay, as then the bargain will not be worth the price. Of course, he would like to pay as much below this level as he possibly can. This limit, which is the highest for the buyer, and beyond which he will not pay under the circumstances, is called the *buyer's maximum* or his maximum demand price.

When P brings the mangoes to the market, he expects to get a price that is not only enough to compensate him for his cost of production, but also something over and above it by way of profits. But he would not like to accept a price below his cost, in this case amounting to 4 As. per dozen. This is his minimum supply price, or the *seller's minimum*, as we shall call it.

Having fixed these two limits, the buyer's maximum and the seller's minimum, our object is to see at what price the mangoes will actually be sold. The seller does not know the buyer's maximum, yet he knows his own minimum, and the price asked by him in the first instance will be more than 4 As., say, eight annas for the dozen. The buyer is pleasantly surprised to get this offer which is much below his maximum. But he desires to make

a still better bargain from his point of view, and offers only five annas with a look that does not betray his anxiety for not letting the bargain go. The seller receives the offer with outward indifference though he is really happy to learn that even at this price he is making a profit. They higggle further but finally both agree to conclude the bargain at  $5\frac{1}{2}$  annas per dozen.

Annas  $5\frac{1}{2}$  per dozen is the price fixed for the mangoes. In these simple conditions of the market, now introduce the element of competition, but only one-sided. Let there be an additional buyer, a richer man than the first, and consequently having his maximum at Rs.1-2-0. Being richer, he does not mind paying this higher price because to him the utility of money is less than to the original buyer. Both of them visit the same seller—suppose there is only one present in the market that day. When they ask P what he will charge for the mangoes, he cleverly asks them to pay what they like. The matter is left entirely to them. A, the first buyer, offers five annas, but B, the second buyer, offers six annas. Here A and B bid against each other and force the price up to a rupee a dozen. Both of them will be willing to pay this

price as it is just equal to the maximum of A and below that of B. In order to have the mangoes for himself rather than go without them, B may offer Rs.1-1-0. The first buyer will find this price too high as it is higher than his maximum, and he will retire from competition. The bargain will thus conclude at Rs.1-1-0 for the dozen and will go to B. This very high price has been brought up to this level merely by the competition between the two buyers.

To introduce competition on the supply side, let A be the only buyer and P and Q two sellers. Q is a more efficient producer and the cost of production of a dozen of mangoes to him is, suppose,  $3\frac{1}{2}$  annas. P and Q both anxious to sell their mangoes, will show their willingness to let A have them at a lower price. P will be out-bidden by Q offering to sell at, say  $3\frac{3}{4}$  As., a price below P's cost of production. A will get the mangoes at  $3\frac{3}{4}$  As. per dozen, a very low price indeed pulled down to this level by the competition between the sellers.

But for the good luck of the poor buyers there are many sellers and for the good luck of the producers with a high cost there are many buyers. As

a result of competition among buyers and sellers, and higgling between these two groups, a price is fixed at which most of the buyers get the article and most of the sellers sell their commodities. Of the buyers there are some that are too poor to buy at that price, and they will go without the article, though they would have bought a small quantity if the price had been a little lower. Similarly, among sellers there are some who have too high a cost of production and will go without making a sale at that price, but they would have sold a quantity had the price been a little higher. Suppose on a particular day the price of mangoes as fixed by market conditions is  $5\frac{1}{3}$  As. per dozen. At this price our buyer A will purchase  $38\frac{2}{3}$  dozens and the seller P will sell  $38\frac{2}{3}$  dozens. Taking the demand of A as representing the demand of all the buyers, and the supply of P as representing the supply of all the suppliers, it becomes evident how demand and supply equate, and determine the price.

## EXERCISES

1. What is meant by 'equilibrium of demand and supply'? Under what conditions do demand and supply balance?

2. Explain and illustrate how the market price of a thing is fixed at a given time and place.

How and to what extent does the cost of production, under competitive conditions, influence the price fixed upon?

3. What do you understand by "buyer's maximum" and "seller's minimum"? How are these two limits related to 'market price'?

4. Discuss whether the value of money like the value of anything else is purely a question of demand and supply.

5. How is 'value in exchange' influenced by 'value in use'?

6. Show the interrelation between demand, supply, and price.

## Chapter VII

### MARKETS

Commonly speaking, by market is understood a locality in a village or a town where commodities are bought and sold. Such markets are sometimes associated with certain commodities that are generally bought and sold there. A town may have its grain market, cloth market, shoe market, *sharaffa* and several other markets for other commodities. In economics, by market is meant not a place where commodities are exposed for sale, but the *entire region* where buyers and seller are in such *free intercourse* that the price of a commodity *tends to equality* easily and quickly. Thus the physical presence of a commodity is not necessary for a place to be included in its market; the presence of the buyers and sellers is essential. If in Benares, people buy and sell the Imperial Bank shares safely kept in the safes of the brokers in Calcutta or Bombay, Benares becomes a part of the market for the Imperial Bank shares. Even if the seller be a Calcutta broker, who is not personally present at Benares, and makes a deal with the Benares mer-

chant through the telephone, Benares does not cease to be a market for those shares.

'Price tends to equality easily and quickly' means that only a tendency is there for the same commodity to be sold at the same price throughout the entire region. Of course, an allowance has to be made for the cost of transport. This element of the cost of transport assumes greater importance in cases of bulky and heavy commodities. The price of sugar at Gorakhpur and Benares *cannot* be the same, as a Benares merchant will have to add to his purchase price the cost of transport of sugar from Gorakhpur to Benares and this he will pass on to the consumers. Yet even after this allowance has been made, there is *no certainty* of price at Benares being only as much more as the transport charges than the price of sugar at Gorakhpur. If price at Gorakhpur is Rs.9 a maund, and the cost of transport and other incidental charges incurred in bringing sugar to Benares amount to 0-8-0 a maund, the tendency for price at Benares should be to be fixed at Rs.9-8-0 a maund. If it is not, it is accounted for by a *lack of free intercourse* between buyers and sellers.

**Intercourse between buyers and sellers**

**or competition.** There is perfect intercourse or competition between buyers and sellers when we assume the conditions of *perfect knowledge* and *perfect freedom* in the market. Perfect knowledge implies that every buyer knows the price being asked for a commodity by every seller, and that every seller knows the prices being offered by the buyers to different sellers. Perfect freedom means that a buyer has no difficulty in easily buying the article from whichever seller he chooses, and the seller has no difficulty in selling any portion of his stock to any buyer he likes. It means that there is two-sided competition—competition among buyers and competition among sellers, and higgling among buyers as a group and sellers as a group. If such perfect competitive conditions prevail in a market, price\* for the same commodity must be equal. If there is difference in price, it should be concluded that competition or intercourse between buyers and sellers is not free. As such a complete and perfect competition is hardly

\* If the units of a commodity are exactly similar and undistinguishable so that one can be substituted for another, they must be bought or sold at the *same* price in the same market at the same time. This is in accordance with the Law of Substitution.



ever to be attained in the market, price of a commodity in the entire region is hardly ever equal.

**Local market.** By a local market we mean a small area where buyers and sellers of a commodity compete against one another for the sale and purchase of a commodity. As against that we can have wide markets—provincial, national and even world-wide, for some commodities in which exchange transactions are made by buyers and sellers scattered over wide areas. This distinction between wide and local markets is made on the basis of area.

**Extent of market.** In mediaeval times markets were every narrow. Under domestic economy or the guild system, commodities were produced on small scales. These commodities were usually sold in the towns and in the neighbourhood, except in the case of big fairs where people gathered together from distant parts of the country. Visiting these fairs was not an easy matter in those days as there were no railways and no good roads. Transport of men and commodities was very slow and expensive. It was not safe too in the absence of strong central governments. The development from the town markets to world-wide markets of

today has been possible because of the improvements in the means of transport and communication.

Improvement of roads followed by the invention of railways and steamships has lessened distance enormously; and goods can now easily be sent to distant places much more quickly. Building of bridges over rivers and construction of commercial canals, like those of Panama and Suez, have helped both road and water transport to take up the shortest possible routes to one's destination. Now has come up the air transport with great possibilities as a means of quickest transport of specially those goods which are perishable. It has speeded up communication and in this connection telegraph, telephone and wireless combine with it to put purchasers and sellers of distant lands in communication with one another. Printing press and the radio have scattered information of goods and prices broadcast, and have thus established the condition of more or less complete knowledge of the market. The establishment of banking institutions with their branches opened throughout the world, have helped in the movement of money as a means of payment for goods, an important service

without which the purchase and sale of goods cannot be completed.

These advantages are meant for all the commodities, yet they cannot be enjoyed by all of them equally well. To enjoy a wide market with the help of the above facilities of transport, communication and banking services, a commodity must possess certain qualities.

It should be in *universal demand*. Unless people all over the world demand a commodity, it cannot find purchasers over wide areas. The commodities that possess general demand are gold, silver, wheat, and cotton. In addition to them there are investment securities which are bought and sold almost in every market.

As has been pointed out, a commodity need not be present at a place before it can be exchanged there. This is possible only if the commodity can be easily and exactly described, and the purchaser may have a clear idea of the quality of the commodity. It is better if it has been *graded* and the grades are known widely. Wheat and cotton have been sampled very finely and there is no difficulty for a prospective buyer to understand, as for example, what kind of wheat he is

going to buy if it is Poosa No. 12.

In order to enjoy a wide market, a commodity should be *portable*. A commodity is portable if it can be easily packed and unpacked, occupies a small space, and is not heavy. It should also possess high value in small bulk. Heavy and bulky goods are charged higher freights by transport agencies; they are costly at their destination, and therefore demand for them falls off; due to very high cost of transport to distant places, its price usually becomes prohibitive. Then the goods of high value bear low transport charges per unit of money cost. A sack of wheat weighing a maund has value worth Rs.5, while silk goods of the same weight may have a large value of Rs.1,000. If freight is the same on both the commodities—say Re.1 for 600 miles, wheat will bear Re.0-3-2½ approximately per rupee as the cost of transport, while silk about one-fifth of a pie per rupee. Silk has, therefore, greater possibilities of wide market than wheat.

Again, the commodity *should stand transport well*. Fresh fruits and vegetables, meat and eggs cannot stand long storage in ships and railways while being transported, and consequently cannot

have wide market. As a matter of fact, before the advent of scientific packing, ice holds, and refrigerating vans, the market was a very narrow one. Only the above-mentioned improvements with the quick and through transit have helped these perishable commodities to enjoy nearly a world-wide market. Oranges from New Zealand, mutton from Argentine, eggs and bacon from Canada, green vegetables from Holland, and butter from Denmark adorn the dining table of an English family; while Shillong *anannas*, Muzaffarpur liches, and Kabul grapes provide us refreshments at Jhansi and Cawnpore.

### EXERCISES

1. Define 'market'. Distinguish between a local market and a world market. Name five commodities that have a local market and three commodities that have a world market.
2. What are the causes that influence the extent of the market for a commodity? Discuss the qualities that commodity should possess in order to have a wide market.
3. Discuss the marketing of one of the principal crops in your district by the raiyat. What commo-

ties can be said to have a good market?

4. How far does this province satisfy the conditions of a good market for (a) wheat, (b) sugar cane?

What is a perfect market?

5. Why is it

(a) that a cow sells cheaper in a village than in the neighbouring city?

(b) that cloth is dearer at Allahabad than at Delhi?

(c) that oranges at Nagpur are much cheaper than at Agra?

## Chapter VIII

### SHORT PERIOD PRICE AND LONG PERIOD PRICE

The mango-seller of the last example has been particularly lucky to have sold mangoes at the rate of 9 annas per dozen, thus making per dozen a profit of  $1\frac{1}{3}$  As. ( $5\frac{1}{3}$  annas *minus* 4 annas). This good profit may have been due to the following causes: (a) to the arrival of mangoes early in the season when people are anxious to eat them, (b) to the festival day when it is customary to send presents of mango fruit to friends or relatives, (c) to the supply of mangoes being at that time specially low and its accidental coincidence with the particular occasion of high demand. Any of these causes might have been responsible, but the sellers made good profit on their part that day. These sellers in the expectation of the demand continuing high for sometime, would bring greater quantities next day; and those sellers, who were as yet hesitating to send their supply of mangoes to the market, would also bring in their supply. As a result of this, the supply would be considerably increased on the following day.

Thus the supply having increased next day, the sellers would be more anxious to sell the mangoes and there would be greater competition among them to sell the increased stock provided that there was no falling off in demand. Consequently they must ask lower prices. But the prices would be lowered further still, if on account of the special occasion of the festivity being over the demand became less enthusiastic than on the previous day, for weakness of competition among the buyers would pull down the prices to a still lower level. On seeing the prices falling lower than they were prepared for, the sellers would sell less, and keep back the stock for future sales. But some mangoes would probably be sold at  $4\frac{1}{2}$  annas a dozen presumably.

Next day the demand, might improve again. The sellers at the same time being less hopeful of affecting good sales, might bring lower supplies. The result would be that prices would be steady at, say, 5 annas a dozen.

These fluctuations in the prices of mangoes are day-to-day changes. There is no stability in the price; it changes from  $5\frac{1}{3}$  annas to  $4\frac{1}{2}$  annas and from  $4\frac{1}{2}$  annas to 5 annas, and does not stay at a level for any considerable length of time. This



kind of price is called the *Short Period Price* or *Market Price*.

Fluctuations in the market price become more prominent if an example is taken of a much more perishable commodity than mangoes, say, water lemons which cannot be stored overnight without injury to their quality. Suppose today a huge quantity of them has been brought to the market as the sellers expected a high demand for them. The lemons reached the market (vegetable market) at 7 A.M. By 9 o'clock the clouds gathered and gave the town a real downpour. Who will buy the lemons then? Very few persons indeed! The stock of lemons has to be sold away, because they can neither be safely stored, nor can the sellers afford to pay for their transport to other towns or back to their own homes. The price will fall plumb down. It will be a mistake to say that supply did not play any part in deciding the price of lemons on that day; but as the supply was limited for that day in the market and could not be changed, it did not matter much. It was *demand which played a prominent part* in determining the price. Likewise, if on a certain day it is cloudy in the morning, rains are expected, and sellers bring

only a small quantity of lemons, but later in the morning the weather gets very hot, the demand for lemons may rise. If it so happens, the result will be a high price for the lemons. Here again price depended upon the rise in demand more than upon the supply.

One day for lemons is a *very short period*. Here supply of the commodity is, for the time being, absolutely fixed. Its price will, therefore, rise with a rise in its demand, and fall with a fall in its demand. It is therefore said that *in very short period it is demand that determines price*.

Short and long periods have no definite duration, which is the same for all commodities. A period is long or short in relation to a commodity the supply of which can or cannot be fully equated to a changing demand within that period. Let us come to lemons again for illustration.

If the hot weather persists and the demand for lemons has a tendency to remain high, prices will continue high and the business of selling lemons will be quite a profitable one. Sellers at the same time will be doing all they can to bring in increased supply, and benefit by high prices. But they cannot increase the number of fields to

grow more lemons so late in the season. Moreover, none will be available as other crops would have been sown in them. They will enhance the supply by better irrigation of the crop from the existing wells, and more careful night-watch. They may also augment it by bringing in a small extra supply from the neighbouring town. Yet all this supply will not be great as the lemons are a bulky commodity and the cost of their transport from distant places will be prohibitive. On the whole, supply will increase somewhat, but not enough to meet the demand fully. The price will continue high and the lemon business a profitable one throughout the season. This season is thus the short period for lemons, and the price ruling in this season will be their short period price.

In short period the supply can be increased with the existing factors of production as they are employed for the time being. Time is so short that neither any improvement can be made in the quality of the capital or the skill of the labourers, nor is an increase in the scale of production possible.

One season is the short period for lemons or for fresh vegetables. This period, however, should

not be taken to be the short period for every other commodity. Short and long periods are relative to the commodity in question. If in any period of time the supply of a commodity can be increased with a better use of the existing factors of production alone, and no permanent improvement be possible, then that period should be regarded as the short period for that commodity. It is easy to understand that the period will vary with different commodities.

#### **Long period price and Normal price.**

This season has been profitable for lemon business. The producers of lemons did their best to benefit themselves by the rising prices and wanted to increase the supply of lemons, but they could not do as much as they would have liked to do. They are determined not to miss the chance next season. They will hire more fields, and dig more wells for better and quicker irrigation of the fields. Superior variety of seeds will be secured. Stronger fencing round the fields will be erected to protect the crop from wild animals. The mango-sellers, on the other hand, did not find their business profitable as the summer has been rather hot. It appears as if the next season too the heat wave will occur. They

are thinking of giving up selling mangoes and take up selling lemons. Some of them have already sold their gardens and have made all the necessary arrangements to raise a crop of lemons. The result of improvements in the factors of production employed by the original producers, and coming of people from the mango trade in the business, will be to increase the supply next season.

One year is thus sufficient time during which all possible alterations can be made in the factors of production to increase the supply of lemons to meet the demand for them. One year, therefore, will be regarded as the long period for lemons; and the price that will be fixed as a result of equilibrium between demand and the new increased supply, will be called their *Long Period Price*.

On the other hand, if in one season the business of lemons has been rather unprofitable and the indications are that it will not improve next season too, the producers in the business will decrease the scale of production. Some of them may even take to other businesses. As a consequence, the new supply will bring about a more perfect equilibrium with the low demand next

season. And again a long period price will be reached.

Due to an adjustment in the supply to meet the higher or lower demand in the long period, the long period price will neither be highly profitable nor highly unprofitable. The price will be much nearer the cost of production than it is possible in the short period. If the demand has been low in the short period, the diminished supply of the long period will raise the price. Again, if the price has been high in the short period, the increased supply of the long period will bring down the price. In both cases the new price will neither be very high nor very low as compared to the cost of production.

Will the long period price be exactly equal to the cost of production? It will be if the supply in the long period is exactly equal to the demand in the long period. This perfect equilibrium could be attained if there is no change in the short period demand at all, and the new long period supply is just enough, no more and no less, to meet the demand. These conditions are hardly ever to be fulfilled. Demand over long period changes due to changes in taste, fashion, and the means

of the consumers. The supply may be a little less or a little more because enough factors have not flowed into the industry or too many of them have been employed. Thus the supply may slightly exceed or fall short of the demand, and the long period price will, therefore, be slightly lower or higher than the cost of production.

It is possible that while the lower supply of the short period is being increased to meet the high demand, in its course of rising it may just reach the point of perfect equilibrium with the demand and then exceed it due to improper adjustment. Then for the time being when the new supply just equals demand, the normal price is reached. But it is only just reached and then crossed over. If it had been possible to arrest the supply at that point of perfect equilibrium, the normal price would have been established. Similarly the point of temporary normal price is reached when a greater supply of the short period is being reduced and in doing so it just reaches the point of perfect equilibrium with demand, only to go below this point due to imperfect adjustment.

Thus the normal price is *reached only temporarily*, and does not stay at the point of the cost

of production. It is an ideal price, to reach which attempts are always made but with little success. The idea of the long period price is more concrete and less imaginary and ideal than that of the normal price.

**Stability of Prices.** When once an equilibrium between demand and supply has been reached and a price fixed, it is fixed only temporarily. Whether the short period or long period market conditions are considered, a certain price cannot be expected to reign in the market for any considerable length of time. In narrow markets there occur heavy fluctuations in the price from time to time as in small areas there can occur a wide difference between demand and supply. In wider markets there is comparatively a greater equilibrium between demand and supply of any commodity. A shortage of supply in one part of the market is counterbalanced by an excess of supply in the other, and so also with the demand. Similarly in short period a greater disequilibrium between demand and supply is possible as time allowed for adjustment is too short. In longer periods enough time is available in the course of which supply or demand can adjust better to each other.



Thus in a wide market and in the long period price is comparatively more stable than in the short period and in a narrow market.

It means that the short period price may be much above or below the cost of production; but if time is allowed for adjustment to take place, as in the long period it is allowed, the price will be much nearer the cost of production. Due to mobility of labour and capital out of an unprofitable or a less profitable industry, its supply will be lowered and price raised. Due to these factors flowing into a highly profitable industry its supply will increase and prices will be forced down. The greater is the mobility of capital and labour from industry to industry at a small difference in the profits of the industries, price level in every industry will be nearer the cost of production. For example, If sugar industry is declaring 30 per cent dividend on shares, while cotton industry hardly any, movement of capital and labour will be from cotton to sugar industry. Now due to lower supply in cotton, after the mobility of labour and capital, price of cotton goods will increase if demand remains the same, and the cotton industry will be more profitable than before. Due to increased supply of

sugar its price will be lowered than before if demand remains the same, and sugar industry will be less profitable. Thus there will be less difference in the dividends declared in the two industries after the movement of labour and capital has taken place. And in each industry the price will be nearer the cost of production level. If not, the movement of labour and capital will continue till a state of equality in profits has been reached.

**Price Fluctuations.** A change in demand or supply affects price, but the reaction of a certain change in demand on supply is not necessarily to bring back price to the same level as before. Suppose a commodity is selling at Rs.6, and at that price 100 units are demanded and 100 units are supplied. If demand rises to 120 units, the price rises to, say, Rs.6-8. This rise in price will raise the supply which, suppose rises to 110 units in the first instant. The price level of Rs.6-8 was reached when demand was 120 and supply 100 units. Now that the supply has gone upto 110, the price will come down to, say, Rs.6-4-0. (Here we are neglecting the law of returns under which the article is being produced.) It is not the same price as the previous one. Even if the supply rises

to 120 and fully meets the demand, there is no guarantee that the price will drop down to the starting point. 120 units were demanded at a higher price and when price is falling down again due to a rise in the supply, demand will increase, and a new equilibrium point will be in the process of being reached with supply at 120 and demand at some figure more than 120. It will be reached though temporarily, because again a change in demand or supply will disturb it. Thus the action and reaction of demand and price and supply on each of them will keep the price in a pendulum motion. This pendulum motion will be a bit different from the movement of the clock-pendulum in so much as the clock-pendulum moves regularly in the opposite directions and to the same extent on both the sides whereas in this case there will be *no regularity* in the price movement and *the extent to which prices may be pushed up or down will not be the same*. Yet while a pendulum is rocking left and right, we can more or less accurately judge the mean position it will occupy if it comes to rest, similarly from the price fluctuations of day to day an idea can be formed of the normal price about which market prices will move.

**Price fluctuations and their effect.** Fluctuations in prices do take place all the time. Sometimes they are small like the ripples on the surface of a tank; sometimes big like waves on a big river. At times when there is a gross disturbance in the economic structure and a very wide difference between production and consumption, price fluctuations are as high as the big waves on the surface of an ocean. Such cases occur rarely and at long intervals; but they do occur and upset the economic life of a great many countries. Price fluctuations are by themselves harmful, whether they are big or small. They affect different classes of people in different ways—some favourably and others unfavourably. But no one is fond of heavy changes in prices whether he is a gainer or a loser ultimately.

Rising prices are welcomed by the producers and sellers of commodities. When prices rise, the sellers gain on the stock that they hold. The producers get high prices from the wholesale or retail dealers or consumers; they make good profit and are optimistic about future. They introduce improvements in the system of production and increase the scale of their business. Due to lower cost

resulting from these improvements they make still greater profits. Thus industry as a whole prospers.

The consumers dislike rising prices. Rising prices hit hard those people who have a fixed money income. The purchasing power of their income is reduced to the extent the prices rise; their money cannot buy as much of commodities it used to buy, and their economic well-being is lowered. Labourers and others with a low earning power are the worse sufferers. Labourers may agitate for higher wages and the employers may allow them an increase as their profits are high. But the servants who have a fixed salary and on a time scale, pensioners who have their share fixed once for all, and persons who live on the interest of their earned income of the past, find their incomes reduced without any compensating feature.

Borrowers and creditors are affected in opposite ways. Borrowers who choose a period of high prices for the payment of their old debts contracted at the time of low prices, pay really much less in terms of commodities than what they got as loan. Creditors, on the other hand, cannot refuse to accept the payment of debts and they get

less value than what they parted with at the time of allowing credit to their borrowers. A rupee borrowed at a time when wheat, suppose it represents all other goods, was selling at ten seers a rupee, will count for only eight seers when prices have gone up by 25 per cent. Its repayment means an advantage to the borrower to the extent of two seers and a corresponding loss to the creditor. But people who are lending money now when prices are high, will gain in future if at the time of repayment prices fall. And people who are borrowing now will lose in future, if they have to make payment at the time of low prices. Such losses and gains cannot be avoided if the loan is for a fixed period, and at the end of that period prices happen to be higher or lower than at the time of making the loan.

Falling prices affect producers and sellers of commodities adversely. Their goods fetch less money, which means a loss to them. They may have to keep large stock in hand or reduce the scale of production. The prospects appear gloomy and trade and industry are depressed. Persons who have a fixed income, are gainers as their money buys more of goods than what it did before. The

labourers, pensioners, and others deriving income from fixed deposits gain. Though the wages, salaries and interest on investment are lowered in course of time, yet it does not happen so immediately along with the lowering of prices. Thus these people with fixed incomes do reap an advantage for sometime. To the borrowers, falling prices mean greater value to be paid to their creditors if the debt has to be redeemed at such a time. The creditors, on the other hand, get much more in payment of the loans that they extended in times of higher prices.

But a person is seldom purely a producer, or a consumer or a creditor or a borrower. Usually he is both a producer and a consumer or both a creditor and a borrower. Consequently his gains or losses as a producer are nullified or made up by his losses or gains as a consumer. So also the advantages enjoyed or disadvantages suffered as a creditor are counterbalanced by the disadvantages or advantages falling to his lot as a borrower. Certainly, some people are producers to a greater extent than they are consumers; or they are creditors more than they are debtors. In so far as the losses and gains are not equal in the case of such persons, they make

a net gain or suffer a net loss to that extent.

Fluctuating prices are a source of risk to all. They make both business and life more speculative. Steady prices are on that account much more desirable. One can depend upon them. His calculations about cost and income or income and satisfaction of wants will not be upset. Every economic activity can be planned well ahead without any danger of unnecessary risk. But steady or unfluctuating prices take away all interest from business and life. When no rise or fall in prices is to be expected, there is no need for the producers to move their limbs and use their brains; no attempts to adjust the factors of production is called for; no improvement is deemed necessary. At the same time no fortunes are made or destroyed in trade and industry. Where is the inducement for efficient men to forge ahead of their inefficient competitors? Where is the sense in planning new industries, exploiting new resources, discovering new markets? In short, there is no chance for the development of industrial activity which is the life blood of progressive communities. Every thing becomes stale and humdrum, and economic life comes to a stand-still—



a very undesirable state of affairs for a country or the world. It is much better that fluctuations be occurring in prices rather than there be no fluctuations at all.

From the point of view of maintaining a comparative stability in prices and also stimulating economic activity, it is best that the fluctuations in prices should be small. If the free actions and interactions of demand and supply lead to violent fluctuations, the currency authorities should so manage the amount of money available in the community as to keep the fluctuations within reasonable limits.

### EXERCISES

1. "The value of a commodity cannot be permanently much above or below its cost of production." Explain.
2. Distinguish between market price and normal price. Under what conditions is the cost of production a dominant factor in the determination of price and why?
3. Can you point out the difference in the factors that regulate the price of agricultural produce and of manufactured goods? Illustrate your answer.

4. What causes bring about a divergence between short period price and long period price? Is it possible for the normal price to be exactly equal to the cost of production?

5. Analyse the statement:

"In the determination of price the influence of utility preponderates during short period, but that of cost of production in the long run".

6. "The law of market states that one and only one price of a commodity can rule at a time in the market." Explain.

Enumerate the factors that keep the price steady and those that fluctuate it.

7. How far is the stability of prices desirable

(a) from the social point of view?

(b) from the individualistic point of view?

If prices fluctuate widely, who are the gainers and who are the losers, and why?

8. Comment on the following:

(a) "Normal price would be fixed at the point where the cost of production of the marginal producer was equal to the marginal utility to the consumer."

(b) "In very short periods it is the demand

that determines price, supply remaining more or less inactive. In short periods, supply also begins to operate but demand has still the upper hand. As period grows bigger, the influence of supply is felt more and more, until at last in very long periods, it is the supply which plays the more prominent part".

## Chapter IX

### MONEY

**Money fulfills a great need in exchange.**

The inconveniences of exchange by barter are many and people have from early times been adopting devices to overcome them. Money is such a device that renders the activity of exchange less troublesome. Think of those difficulties of finding double coincidence and establishing a rate of exchange; and also the injustice which one of the exchanging parties usually suffered. All that has been done away with by money. A person may walk down to a market place where various articles that he wants to buy, are arranged in shop; he has to take no trouble to bring about the double coincidence. The rates at which the commodities are being sold are already fixed for him in most cases, and no difficulty is experienced in the establishment of the rate of exchange. He can very well compare the utility lost and utility gained, and buy the article desired only when he feels satisfied that he is losing no utility in that bargain. All that unnecessary labour that went along the

exchange by barter, is saved. That is why money has been styled as a labour-saving device.

In economically advanced countries metals are being used as forms of money since a long time. Yet there have been various other commodities used as money in different places and at different times. In primitive ages, among communities that regarded cattle the most important form of wealth, cattle have been used as money. America has provided many interesting examples from quills full of gold dust to wampum and beads. In North Canadian forests furs are a common money article even today. India has not lagged behind, and during the reign of Mohammed Tughlaq enjoyed the luxury of leather money though for a short time. As a matter of fact, every other form of money except the precious metals used to-day, had a short run, and was replaced whenever another commodity, that suited the purpose better, was found out. The reason for this change was that these commodities did not possess the qualities that a money commodity should possess.

#### THE QUALITIES OF A MONEY-COMMODITY

**General Acceptability** has always been considered as the essence of money. It is of no ad-

vantage to a person to accept in payment of his goods and services a commodity which is not going to be accepted by others. Unless people in general are willing to accept an article as a common means of exchange among themselves, it will have a limited circulation. Gold and silver, taking them as representative metals, have been popularly acclaimed as the right metals and they are used universally as money-commodities. Even where paper money is kept in circulation, it is accepted as a means of exchange only because it is generally believed that it can be converted into gold or silver.

**Portability** is another essential attribute that a money-commodity should possess. If a book-seller is offered a sack of grain as a price for a book, how will he handle fifty sacks if he sells as many books in a day? It will be very inconvenient to a person to carry about this kind of money from place to place for the purposes of exchange. To serve as money, a commodity should have **great value in small bulk** otherwise it will be a hindrance rather than a facility if it cannot easily be taken from place to place or passed from hand to hand. Precious metals possess that quality of portability in them in a great measure.

Then comes the question of **imperishability**. Of course, nothing in this world is imperishable, but we want those articles to be used as money, which will be comparatively imperishable. In course of circulation money-articles suffer a lot of wear and tear, and if in addition to being perishable a commodity is also soft or brittle, its use as money will not be economical. To harden the metals still more, some kind of alloy is mixed with them so that they may enjoy longer life. Gold coins can stand circulation for a few thousands of years and can well be regarded imperishable on comparison with vegetables that will not last a week, or grain and cattle that last utmost a couple of years or a couple of decades.

Money is expected to be of a **uniform value**, a quality chiefly found in metals. Horses cannot be uniform; nor grain nor skins. The employment of a commodity which lacks **homogeneity** will mean unnecessary loss to people. Even coins have got to be uniform in value. If your rupee contains 165 grains of fine silver and mine—a Hyderabad coin—less than that, they cannot be used uniformly.

Money is to pass from hand to hand, and if it

breaks by accident or is intentionally broken and in doing so loses enormous value, as happens with glass or diamond, it will not serve the purpose well. A money-commodity should be such as will acquire the same value if it is divided into parts or if these parts are again joined together and brought to the original form. No loss of value is involved in the case of gold and silver and they possess the required **divisibility**.

Money should be easily recognized by people. Easy and quick **cognizability** by mere touch or sound is essential. Horses and diamonds can be recognized but only by experts and even they may commit mistakes. Such articles will not do for money. Unless money-commodity possesses this quality people will suffer from defraud or counterfeiting. To remove this danger, devices like stamping and milling the edges have been adopted.

To easily take to milling and stamping when minted into coins, or money units, an article should be **malleable**. This quality reduces the cost of minting. It also enables people easily to turn it into the original commodity when so desired and to have it converted into coins once again, if necessary.



**Its value should fluctuate as little as possible.** The dangers of violent fluctuations in prices have already been discussed in chapter VIII of this section. Here it may be mentioned that it will not be pleasant experience to wake up one morning and find that through no fault of one's own the money kept with him can buy only half of the commodities it has been buying till yesterday evening. Gold and silver, specially gold, have shown in the past greater stability in their value than what can be expected of any other commodity.

As these two precious metals possess the above-discussed qualities most among the commodities known today, they have been universally accepted as money-metals.

### FUNCTIONS OF MONEY

The most important function that has given money its definition is that **it is a medium of exchange.** The services of money as such a medium are rendered to remove the difficulties of barter noted earlier. It will be no exaggeration to point out that the economic progress that civilized communities have made so far, has been due to this efficient service of money. The division of labour,

which is the basis of production and which makes other activities more profitable, is supported by the good medium of exchange. If it had not been possible for a carpenter, for instance, to make tables, earn money and with its help buy numerous articles that he wants for daily consumption, he would rather have spent his time in producing those articles that directly satisfy his wants. All people would sooner undertake those jobs that supply them things of immediate consumption rather than specialize in the production of one article, if easy and quick exchange had not been secured by money as a medium of exchange.

**Money is a measure of value.** Utility of a commodity is a personal matter. It differs with different persons. A fountain pen may have some utility to you and to me also, but how much of it you are attaching to the pen, I do not, rather cannot, know. You too will be ignorant of my estimate of its utility. How inconvenient it will be for a seller to make the prospective buyer understand the utility he desires to get for the thing he is selling. A greater difficulty arises when the utility of a pen is to be compared with the utility of a pig, two different kinds of wealth

giving different types of services. How can a business-man give you any correct idea of his riches increasing or diminishing in the absence of money? With the help of money all becomes easy. The value of every other commodity can be expressed and understood correctly. Values can be compared and future estimates of earnings or costs made. It is because money is a *measure* of value which is related to utility, that it is used as a medium of exchange so freely and so easily.

**Money is a store of value.** Goods can be stored but not as conveniently as money. They occupy plenty of space and are liable to deterioration. Then a great danger lies in the fluctuations of their value. In addition to these, they do not allow any choice to a man to change his mind. If I store wheat, I shall consume wheat later on or I should be prepared for a heavy loss in its exchange value if I change my mind and desire to buy rice for it. There is no such danger in case of money. It *represents general purchasing power*, and as long as a person has a piece of money—say a rupee—he has got the freedom of choice of any of the innumerable articles that can be bought for it. This choice can be equally freely exercised today as to-

morrow. A rupee will, for instance, remain a rupee and will not shrink, dry up or rot away if stored for any length of time.

**Money is a standard of deferred payments.** If borrowings are made in goods and payments too in kind, due to a change in their value during the time the debt has to run, the lender or the borrower is put to unwarranted risks. If the price of goods rises, and the borrower has to pay the same quantity of them as he borrowed, he will be paying more value than what he actually received. He suffers unnecessarily to the advantage of the lender. On the other hand, if the prices have gone down in the meantime, the creditor receives much less than the amount he parted with. Money is general purchasing power and though its value changes yet very slightly as compared to the change in value of any other single commodity. Therefore if debts are incurred or paid back in terms of money, the deal is unjust neither to the borrower nor to the lender.

Of these four functions, the first two—money as a medium of exchange and a measure of value—are of comparatively greater importance and are called the primary functions of money.

## EXERCISES

1. Do you agree that any article can serve as money, which freely passes from hand to hand and is readily accepted in discharge of debts?
2. Money has been called 'a labour-saving device'. What kind of labour is saved by money? Illustrate.
3. 'Money is the keystone of the arch of division of labour on which rests our economic structure.' Support the statement.
4. Enumerate the qualities that a money-commodity should possess to be a good medium of exchange. Why have gold and silver been universally accepted as money metals?
5. 'Money is a matter of functions four  
A medium, a measure, a standard, a store.'  
Explain.
6. Money is supposed to fulfil four important functions but it is usually defined as 'a medium of exchange' alone. Why are the remaining functions subordinated to its service as a medium of exchange?
7. Is it really an advantage to use money as a standard of deferred payments? What injustice is likely to be done to people in its absence?
8. Are the following articles different forms of money?

- (1) Gold dust among gold miners. (2) Ration coupons with the labourers in a camp.  
(3) Tokens used by gamblers. (4) Traveller's cheques.

9. Comment on the statement: 'Difficulties of barter give rise to money'.

10. Why do we picture gold and silver coins and currency notes when we think of money? Why should such a preference be given to these metals over things like platinum, diamond and cattle as media of exchange?

## Chapter X

### KINDS OF MONEY

#### METALLIC MONEY

Money is a medium of exchange agreed upon by the community whose economic life depends so entirely upon it that in every country governments have taken up the responsibility and privilege of supplying a good monetary system to the people. All government money is *legal tender*. As it *has the authority of government behind it*, it cannot be refused by people. They are bound to accept it in payment of dues. Failure to accept it will amount to an unlawful act and may be punished by the government.

Legal tender money takes different forms. It may be *metallic* or *non-metallic*, that is, paper money. Metallic money is in the form of coins of different denominations; and so also paper money which is known as *paper currency* or *currency notes*. Both are used as media of exchange; but while currency notes have no intrinsic value, being made of paper which cannot now be used even for scribbling upon, metallic money has got

intrinsic value. By exchange value is meant purchasing power enjoyed by money as a medium of exchange. By intrinsic value is meant the utility of money as a commodity.

All metallic forms of money have such an intrinsic value because they can be used for art and industry after the coins have been melted. But some of them have full intrinsic value while others have only partial.

Coins whose intrinsic value is equal to their face value are called *standard coins*. Coins, whose intrinsic value is less than their face value, are called *token coins*. Standard coins are issued freely and to any amount, the economic needs of the community demand. Standard coins are also *unlimited legal tender*, i.e., they can be tendered or paid in any number, without any limit, in discharge of debts. If A owes B to the extent of one lakh of rupees, A can pass on to B one lakh rupee coins and in spite of the inconvenience which B might experience in taking, counting and storing this huge number, he cannot refuse acceptance. All standard coins are unlimited legal tenders.

A *limited tender* money is that form of coin which can be paid in discharge of dues only upto



a certain limit. Students cannot legally pay Rs. 6|8, all in pice as tuition fees to their teachers and inconvenience them, as one can refuse acceptance of pice beyond one rupee. Pice in India is a limited legal tender to the extent of 64 of them. *All token coins are limited legal tenders.* Token coins are not freely issued; they serve for small change only.

**Rupee is the standard money but not a standard coin.** It is a token coin as its intrinsic value is much less than its face value (as will be shown later by calculation). It has a limited coinage and yet it is a full legal tender. The peculiar position of Indian rupee is rather interesting.

Standard coins have their intrinsic value equal to their face value and thus they can easily be converted into metal if need be. Similarly the standard metal can be converted into coins if necessary. In the countries where standard coins are current, government or minting authority allows the public the privilege of having their standard metal converted into standard coins. Such a country is said to enjoy *free coinage*. Minting operations involve expenditure which is so insignificant in case of gold coins that governments at times do not

charge it to the public that desire to have their metal turned into coins. If no charge is made for this service rendered by the Government, the coinage is called a *gratuitous coinage*. A coinage may be free, yet not gratuitous, if the minting authorities charge the cost of minting bullion into coins. Free and gratuitous coinage systems may exist together but the first does not imply the other.

In India there is no free coinage, mints having been closed to the public in 1893 due to fall in the value of silver. Minting of rupees became a source of profit to Indian Government as rupee became a token coin. The greater the fall in value of silver, the greater is the difference between the intrinsic value and face value of rupee, and the greater the profit enjoyed by the Government. Let us calculate it.

Rupee contains 165 grains of fine silver and 15 grains of alloy. The market value of silver is Rs. 57/6 per hundred tolas.

The silver value of rupee comes to	0-8-5 pies
Value of alloy, 15 grains, about	0-0-1 pie
Cost of minting a rupee including refining etc., utmost	0-0-6 pies
The total cost of putting a rupee in circulation is	0-9-0

Thus the Government makes a profit of about 7 annas in a rupee. This profit was utilized to increase the funds known as the Gold Standard Reserve maintained in England and which now amounts to about £40 million.

The cost of minting a coin is called *brassage* and the net profit which the minting authority makes in coining Billon (token coins) is called *seigniorage*. Seigniorage results from every token coin minted everywhere. It will increase or decrease with a fall or rise in the value of money-metal. It can also be increased by changing the basic metal of the token coin or reducing the contents of fine metal in the coin. Seigniorage in minting 4 anna and 2 anna nickel coins is more than on 4 anna and 2 anna silver pieces.

If the fine metal contained in any coin is reduced, the coin is said to have been *debased*. Putting a less valuable metal for a more valuable one—using nickel for silver, for example,—is also an instance of debasement. Debasement in token coins is not at all unwelcome. Token coins already have their intrinsic value less than their face value and their value in exchange is fixed by authority of Government issuing them. The same authority

can further reduce the intrinsic value without reducing its exchange value. But the debasement of standard coin has grave consequences. It raises price level; it disturbs the balance of trade with foreign countries; it lowers the prestige of the minting authority. In the past, it has often provided a profitable source of income to absolute kings to steal away public money in this fraudulent way.

By *depreciation* of money is meant a loss in its value. As the exchange value of a standard coin depends upon its intrinsic value, its depreciation can take place in two ways: either the coin is debased, i.e., intrinsic value is lowered or its exchange value is lowered by meddling with its quantity in circulation.

Money is a claim on the community as its holder can enjoy the services or material wealth of the community to the extent of his money possessions through the activity of exchange. There are two sides to this exchange by buying and selling: on one side is the entire stock of the goods available for exchange, and on the other side the entire amount of money for which the stock of goods will be exchanged. At a certain time with

any community the stock of exchangeable goods and the amount of money in circulation are fixed. It means that there is a definite rate of exchange that exists between goods and money—a unit of money can purchase a certain quantity of goods which can be found out by dividing the stock of goods by money units. If 50 maunds of wheat be supposed to be the only commodity and Rs.100 the only money possessed by a community, Rs.100 will exchange for 50 maunds of wheat and one rupee will be worth half a maund of wheat.

If the amount of money is diminished, i.e., there is less money to go round, but the stock of goods remains the same, more of these will be exchanged for a unit of money or less money will do where more of it was wanted before. This rise in the purchasing power of money is called its *appreciation*. On the other hand, if the amount of money in circulation is increased without a corresponding increase in the stock of exchangeable goods, prices of goods will rise and more money will be needed to fetch the former quantity of goods or the same money-unit will buy a smaller quantity of them. This is called *depreciation* of money.

Likewise appreciation of money will result if the amount of currency remains the same but more goods are produced and are available for exchange purchases. The depreciation of money will be the result if, on the contrary, goods are somehow destroyed by war or other agency but the amount of money in circulation remains the same. If both the amount of money in circulation and the stock of exchangeable goods change, the value of money or its appreciation or depreciation will be determined by the net influence of the changes in both these items—money and goods.

It should be noted that an increase in the amount of money in circulation is called *inflation*, while a decrease in it is called *deflation*. The inflation of currency leads to its depreciation and the deflation to its appreciation. (These alterations in the value of money are studied according to what is called the Quantity Theory of money).

### EXERCISES

1. Why is money called 'legal tender'? Are you aware of some other means of exchange that are not legal tenders? Why should they be at all current among us?

2. Money is serviceable not only as a medium of exchange but also as a commodity by itself. What different uses of money have been referred to in the above statement? Which is more useful and why?

3. Name half a dozen coins that are limited tenders. Why should they be treated so? Is it not a waste to mint a coin and then limit its currency?

4. What profit does a counterfeiter gain in making a rupee? Calculate it at the present price of silver. What gains or losses will accrue to Government and the public if mints are declared open to the coinage of rupees as we are familiar with them?

5. Carefully estimate the position of Indian rupee. Is it possible for it to be a standard money without being a standard coin?

6. It is the privilege of a government not only to supply currency, but also its responsibility to supply the right kind and the right amount of it. What harm will be done to people if a government does not fulfil its obligations?

7. Distinguish 'depreciation' from 'debasement'. Does it lie entirely with the mints to depreciate money?

8. We estimate the value of all other economic goods in terms of money. Can we not estimate the value of money itself somehow? Is it possible for the

value of money also to fluctuate as the prices of other commodities do?

9. Do you approve of the profits that Government makes in minting token coins? why? Calculate the seigniorage on a ten-rupee note.



## Chapter XI

### KINDS OF MONEY (*Contd.*)

#### PAPER MONEY

**Paper Currency.** Paper notes are like token coins printed on paper. They have no intrinsic value (almost none). If currency notes are denounced by government, all the purpose they can serve is to help a smoker kindle his cigarette, or they can be put in children's album of stamps. Khilafat notes of huge value printed on them, never a medium of exchange, were sold for one anna and that too was regarded as an act of charity.

The exchange value of paper currency depends upon the legal support of government behind them. Paper currency is of two kinds:

**Convertible** paper currency is composed of those notes which the government or the issuing authority undertakes to redeem in terms of standard coins if the holder of the note so desires. They are a form of 'promises to pay'. A ten-rupee note for example reads "I promise to pay the bearer the sum of ten rupees on demand at any

office of issue." They bear the signature of the issuing authority on behalf of the government. Convertible notes in India are of the following denominations: Rs.5, Rs.10, Rs.50, Rs.100, Rs.500, Rs.1,000, and Rs.10,000. Notes of Rs.5, Rs.10, Rs.100 are called *universal notes*, as they can be encashed at any government treasury or currency office. Notes of a higher value than Rs.100 can *legally* be encashed at the currency office that issued them, though every facility is afforded to the holder by all the currency offices for their encashment. In India there are currency offices at Bombay, Kalicut, Madras, Rangoon, Calcutta, Cawnpore, Lahore and Karachi.

**Inconvertible** notes are not intended to be changed into cash by the issuing authority. They are called *fiat money*, circulating due to the credit of government—Greenbacks of America for example. If not issued in excess of public need they are not a bad form of money, but there is no accompanying responsibility of the government to keep cash for their redemption; about three score instances are provided by history when governments of various countries resorted to issuing inconvertible notes in times of emergency.

Excessive issue leads to depreciation of currency—much more so in the case of inconvertible notes. During the war, German 'Mark' presented a classic example when the value of the note was not equal even to the value of paper on which it was printed. The money that could formerly buy a horse was not enough to buy a horse-shoe. In France during the French Revolution, 'Assignats' depreciated to one per cent of their face value. Is a note really money-purchasing power, if a cabman does not consider it worthwhile to bend himself to pick it up from the pavement where it accidentally dropped when he was counting the cabfare?

To guard against over-issue of even convertible notes in India, a *paper currency reserve* is maintained with a cent per cent reserve value for each note issued. The constitution of Reserve as on 22nd May 1933 was as follows:—

Notes in circulation worth	Reserve-value in rupees
Rs. 1,75,59,16,970	
Silver coins	94,35,05,994
Silver bullion	14,76,55,002
Gold bullion	26,37,36,997
Metalic Reserve	1,35,48,97,973
Securities	40,10,18,997
Total reserve	1,75,59,16,970

The percentage of metallic reserve to total note-circulation was 77.16. Out of this 53.4 per cent was in silver coins and the rest in silver and gold bullion. The figures show that government keeps silver rupees in which notes can be encashed to the extent of more than half of the total note circulation. This sum can be increased by minting silver into rupees and also by selling gold and buying silver from the market for further minting if the rush for encashing notes on government treasuries and currency offices is great.

The security portion of the reserve is a productive item as opposed to the metallic portion, for it earns interest on the first class or gold-edged securities kept in the reserve. If any need arises, the securities can be sold in the exchange market and money realized with which notes can be redeemed. The metallic reserve bears rather a high percentage to the total note circulation, and if more of it is maintained in the form of the securities a greater income can be earned through them. Fifty to fifty-five percent metallic reserve can ordinarily serve to inspire confidence in the convertibility of paper currency, but the government seem to take no risk whatsoever at the sacrifice of

some dividends that may accrue on the *fiduciary* portion of the reserve, as the securities in the reserve are called.

Formerly a portion of the paper currency reserve was kept in London, but that practice has been given up. Currency notes are chiefly meant to be circulated, within the boundaries of this country. If at any time there is any rush for the encashment of these notes, it will be on currency offices in India. To promptly meet that demand any reserves kept in London will be of no avail. It is wise, therefore, that all reserves are maintained in this country to fully meet any emergencies.

#### ADVANTAGES OF PAPER MONEY

In every country, paper currency forms a very important part of the monetary system, and with a development in its economic life the position and the importance of paper money will be increasing. It serves not only the purposes of exchange served by metallic money, but serves them better and more economically. Paper money is very light and therefore can be easily handled and cheaply transmitted through the post. It is very

convenient to store as a great value is contained in a small space.

A 10,000 rupee note can be folded up and carried in a waist-coat pocket without anybody being the least wise of its presence there. This system of carrying big amounts of money with one's person has the additional advantage of not exposing the person to any danger of being relieved of it by undesirable characters.

The cost of making it is almost negligible. Hundreds and thousands of rupees can be represented by a few square inches of paper costing only a couple of pies. If they are roughly handled and therefore soiled and torn, they can be quickly and cheaply replaced by new ones. Thus it can be said that the loss by wear and tear is none for practical purposes. Gold and silver coins are hardened by a mixture of alloy to reduce their wear and tear, but still they suffer a lot of loss in the ordinary course of currency and also at the hands of the pilferers. Chemicals are often applied to get a few grains of the metal out of them. The loss from these sources will be found considerable if it is calculated on the total number of all kinds of coins that are in circulation.

Notes calculated to enjoy these advantages should be printed on tough paper, and their design should be intricate and hard to be imitated by the forgers. At the same time the public must not be allowed to have any suspicion of the motives of the issuing authority to pay cash for them when so required. This readiness to promptly meet such a demand is the basis of sound and reliable paper currency.

If a convertible paper currency can serve exchange purposes so well and so economically, it appears a trait of savagery to stick to gold and silver just because their dazzle appeals to the eye. Paper currency should be a better substitute for metallic one. Those countries, that use this form of currency more and more, are economically more progressive. It is in the countries that are still backward in the march of industrial civilisation that metallic currency is held in higher esteem than the paper currency. But it must be admitted that metallic coins will always be needed in every currency system to be used as token money to serve for small transactions.

## EXERCISES

1. What is understood by the currency system of a country? Do you think paper currency is indispensable to every country?
2. Name half a dozen convertible notes and say why a note is called convertible? Do you know why a convertible note is preferred to an inconvertible one?
3. 'There is no danger from inconvertible paper currency only if the issuing authority can control its greed or the speed of printing presses.' Do you agree with this opinion? Why?
4. What steps are taken by the Government of India to ensure the convertibility of currency notes?
5. What is 'Fiduciary' portion of the paper currency Reserve? Is there any harm if this portion is increased at the cost of the metallic portion? When notes are convertible into silver rupees, why should gold coins and gold bullion be maintained in the Reserve?
6. Enumerating the advantages of paper currency over the metallic one, show reasons why should not the former totally replace the latter.
7. Why should paper currency be regarded as a sign of advanced economic development? Can you give some reasons why currency notes are not so popular in India as they should be?



## Chapter XII

### MONETARY STANDARDS

A system of currency under which one metal is used as a standard of value is called *mono-metallism* and the country is said to be a mono-metallist country. Economically strong and rich countries have adopted gold as the basis of their currency and they are called gold-standard countries. Poor or economically weak countries have silver as a basis of their currency (China). The two important countries still on gold basis are France and Holland (December 1933); others, though formerly on gold basis, have gone off gold. Gold currency, free and unrestricted, implies free coinage and free export or import of gold. If any restriction is imposed upon export of gold—an embargo on gold—the country ceases to be a free market for gold. If the currency loses gold for its basis, it is off gold. More than a dozen countries formerly on gold basis, have gone off it following the lead of England since September 21, 1931.

Position of India is a peculiar one. It has silver currency for internal purposes, which

could be changed into gold if required to be exported or used for internal purposes, at the rate of Rs. 21-3-10 pies per tola. Government had also undertaken to buy gold in bars of 40 tolas at the same price. This system was called the Gold Bullion Standard—a system by which the silver currency of the country was interchangeable in gold bullion at a fixed rate. This has been upset by world monetary conditions which sent England off gold. Rupee had been linked to 1 shilling 6 pence in the pound sterling which was as good as gold when on the gold basis. When Pound was 'unhinged', the Government of India decided to dislink rupee with the pound and keep it linked to 1sh. 6d. worth of gold i.e., maintain the Gold Bullion Standard; but the Secretary of State for India decided that it was in the interest of India to keep the rupee linked to pound sterling. So it is linked at present. This system can be called *Pound Exchange Standard*, as rupees can be exchanged into pound notes only, pound not representing gold as the basis of its value.

#### BI-METALLISM OR DOUBLE STANDARD SYSTEM

Under *Bi-metallism* two metals, generally gold and silver, are indifferently used as standards of

value. It means free coinage of both silver and gold, the two standard *coins* having a fixed ratio of exchange between them. In U. S. A. gold and silver were coined on the same terms before 1873. A variety of bi-metallism was operating in France and the Latin Monetary Union till the early "seventies". Bi-metallism can effect greater stability of prices in the country using it. It can also maintain a closer touch with price fluctuations in countries using double or single standard of either gold or silver, but the main difficulty in the smooth working of a double standard arises when one of the metal is over-valued.

Suppose the ratio between gold and silver is fixed at 1: 16, that is one tola of gold equals sixteen tolas of silver in value. If silver coin becomes over-valued, i.e., suppose a tola of gold is equal to 17 tolas of silver in the market but the currency ratio remains as 1: 16, people will have their gold changed into silver in the market, take that silver to the mint, and have it coined into more silver pieces. A gold coin will through this device bring a man 17 silver coins though the currency authorities will accept it as worth 16 only in the mint. Thus gold will be turned out of currency leaving its place to

silver coin which is overvalued as a medium of exchange.

Out of these two coins, gold and silver, the former is called the *good coin* as it retains its usual value, and the latter is called the *bad coin* as it passes for more than what it is really worth. When two such coins as pointed out above, are in circulation at the same time, the bad coin is kept in circulation and the good coin is turned out of it.

This tendency of bad coins turning out good coins has been given the name of Gresham's Law, because it was Sir Thomas Gresham who first of all brought it to public notice. The law has been stated thus: 'In every country where two kinds of legal money are in circulation, the bad money drives out good money'.

The tendency as operating in a bi-metallist country has already been noticed. Instances are to be found in mono-metallist countries too. It is seen that along with fresh coins which have full weight and therefore are good money, the lighter coins or bad money pass into circulation, and the heavier ones are held back. This fact can be borne out by personal experience. An individual will practise this trick if his income is more than

his expenditure. If, on the other hand, his income is just enough to meet his expenditure, it is no use differentiating between good and bad coins as all the coins will be leaving him ultimately. Similarly it can be concluded that if a community has as much of total money as just meets its requirements of currency, there is no chance of the operation of this law. Again, if the unlimited legal tender is a token coin, as rupee in India, its value in exchange will almost always be more than its value as a piece of metal. There is, thus, no temptation to keep back heavy weight coins. As a matter of fact, the distinction of good and bad money does not apply to rupee in the sense it applies to standard coins. If still people like new rupees more than the old ones which they pass into circulation first, they are influenced only by greater brilliance of the new coins.

Another instance of the operation of this law is to be seen in a country where a depreciated paper currency is in use along with full valued metallic currency. Obviously a depreciated paper currency is bad money as it cannot be converted into as many coins as are represented by it. If this currency is not withdrawn from circulation, or its

quantity is not properly regulated, there may rule two prices in the same market for the same commodities. The paper prices will be on a higher level than the gold prices. If Indian paper currency is declared inconvertible, a five-rupee note will not buy as much of a commodity as five rupee coins. There will be a premium or extra value attached to the coins, and paper will be predominantly used for exchange purposes.

Coming back to our original problem, what happens to the good coins that are driven out of use as currency? Good coins are liked more than bad ones because they possess greater intrinsic value. They are, therefore, hoarded. People who hoard such coins are sure that they are hoarding better value for future use. They are also melted and used for the purposes of art, as they contain greater quantity of pure metal than the bad ones. Yet another way in which good coins are actually banished is that of export. In payment of foreign debts, a coin counts by weight and not by tale. A good coin, thus fetches higher value as a means of payment abroad.

## EXERCISES

1. Why has gold been accepted as the international currency? What arrangements are made for foreign payments by countries having a silver currency?
2. Is gold the standard of value in India? Will it be any advantage to India to have a gold currency?
3. A dozen of countries have gone off gold. They do not have silver currency. How at all can they manage their currency policy in the absence of these two metals as standards of value?
4. What advantages does a bi-metallist country enjoy over a mono-metallist one? Are there any possible dangers attendant on bi-metallism?
5. What is Gresham's law? Explain how it comes into operation.
6. Rupee is unlimited legal tender and yet has its intrinsic value less than its face value. How is this peculiar position of rupee maintained by Government here? Will there be any disturbance in currency if new rupees as standard coins are circulated along with the present rupees?

## Chapter XIII

### CREDIT MONEY

In a sale and purchase transaction, the act of exchange is completed as soon as the commodity is received by the purchaser and its price by the seller. Though the same commodity can be passed from hand to hand many times, and each time its price paid by the buyer and received by the seller, every time this double transference of money and commodity takes place there is a complete act of exchange. The presence and help of ready money in completing this kind of exchange is indispensable.

Sometimes a person has either no cash or too little of it to pay promptly or on the spot for the commodity he desires to buy. If such a person visits the shop of a stranger, he will have to go without the desired article. But if he is known to the seller, and has had previous dealings with him, he may be allowed to take away the article and pay its price sometime later. The reason why the shopkeeper accommodates his customer is that he knows that so far as his experience is based upon his past



dealings with the customer, he was either promptly paid for the articles sold or that he received payment on the time fixed for such a payment. He, therefore, believes that because the customer has been punctually honest in the past, there is no reason why he should not be so this time or in future. On such a confidence that he had in the honesty and business morality of the customer, is based this allowance or accommodation extended by the seller to him.

This privilege or accommodation permitted to the buyer to pay at some future date, for the commodity received today, is called *credit*.

A credit transaction is a *protracted exchange* because it is not completed at the time the buyer receives the commodity from the seller; it is lengthened out or prolonged till the time when the seller receives full payment of the price from the buyer. A credit transaction differs, therefore, from the sale and purchase exchange in being based upon the confidence of the customer and in having an element of time in it. If A buys a gramophone from B and pays ready cash, B needs have nothing by way of confidence in A's honesty; the transaction is at the same time closed immediately. But if B allows A

to pay Rs. 25/- for the gramophone in the course of 60 days, B allows him credit to the extent of Rs. 25/-; and the sale and purchase of the gramophone will remain incomplete till 60 days later when B receives full payment of its price.

When a customer buys something on credit, usually he leaves with the seller a token or proof of the deal or a written promise to pay the sum at a future date. These written promises to pay are termed *Instruments of credit*.

The simplest instrument of credit containing the buyer's promise to pay the seller a certain sum of money for value received after a period of time is a **promissory note**. Here is a specimen.

### Promissory Note

Rs. 25/-

Benares, Dec. 10, 1933

STAMP  
ANNA  
ONE

Two months after date I promise to pay Messrs. Gramophone Stores, Benares or order, the sum of rupees twenty-five only for value received.

N. SINGH

The expression 'for value received' proves that the promissory note has been made out in lieu of payment for a genuine transaction and that no

force or fraud has been practised on Mr. N. Singh.

Promissory notes are written by the borrowers of money in favour of their creditors also. Even the Government of our country, like almost every other government, raises funds on such promises to pay them back after a definite period of time.

**Cheques.** Another instrument of credit gaining greater popularity in modern times is a cheque. A cheque is a written *order* issued by a depositor to his bank to pay an amount of money specified therein to a person whose name is entered on it. It is an unconditional order which the bank must obey if the depositor has enough money to his credit with the bank. The person, who writes a cheque, is called the *Drawer*; the bank on whom the cheque is drawn is called the *Drawee*; and the person in whose favour the cheque is drawn, is called the *Payee*.

The payment for a cheque can be received on presenting it at the bank's counter and signing it as an evidence of having received payment. If it is a '*Bearer cheque*', any person, whether he is the rightful payee or not, may receive payment. The bank cannot be held responsible for the payment to a wrong person in case of a bearer cheque. To

make it an '*Order cheque*' by striking the word 'bearer' and writing in the word 'order', is a secure form of payment, as in this case the payee will have to furnish identification. The safest way is to cross a cheque by drawing two parallel lines across the face of it. No prompt cash payment can be made for it even if the payee presents it to the bank. Merely a transference of the sum mentioned in that will be made from the account of the drawer to that of the payee. If the payee wants to draw the money, he will be required to draw a fresh cheque in his own name.

The specimen of a cheque is given on the following page.

No. BC/9

41902

No. BC/9

41902

Benares City Oct. 4, 1933

Dated Oct. 4, 1933

In favour of

*Oriental Life  
Assurance Co.*

Rs. 69-2-0.

ALLAHABAD BANK LIMITED

Benares Sub-agency

Pay to *Oriental Life Assurance Co. Ltd.* or bearer

Rupees *Forty-nine and annas two only*

Rs. 69-2-0.

*Gopinath*

The section on the left is the counterfoil to be retained as a memorandum, while the section on the right is the cheque proper. Mr. Gopinath is the drawer, and the Benares sub-agency of Allahabad Bank Limited is the *Drawee* with which Mr. Gopinath keeps an account, and Oriental Life Assurance Company Limited is the payee. The cheque was originally printed as a 'bearer cheque', but for the sake of safety it has been crossed with an ordinary crossing by writing the words '& Co.' between the parallel lines.

A cheque is more of the nature of a cash payment than other credit instruments. If a cheque is drawn on real deposits that exist and accepted by the payee, in ordinary course the transaction has come to an end. The exchange will be regarded as incomplete only when (for one reason or the other) the cheque is dishonoured because there is not enough money in the account of the drawer to pay for the cheque. Nevertheless the success of a cheque as a medium of exchange is based upon the confidence which the payee has on the honesty of the drawer. And there is an element of time howsoever short between the transference of a commodity and the transference of its price in legal cur-

rency. The cheque drawn by a person of sound means and high repute in the market is as good as money, but it *is not money* after all, and there lies the element of credit and the element of time which intervenes before the payee gets it encashed at the bank.

### BILL OF EXCHANGE

A promissory note or a cheque is used both for personal and commercial transactions; a bill of exchange is used for commercial purposes only. It is a written request made by A to B to pay a certain sum of money to C. Generally B is a debtor to A and A a debtor to C and both these debts can be cancelled by one payment of B to C provided the indebtedness in each instance is to the same extent.

If B owes A Rs. 1,000 in payment of goods bought from him and has been allowed a month's time in which to make payment, while A owes the same amount to C from whom he has bought goods on one month's credit, A will draw a bill of exchange on B to the value of Rs. 1,000 to be paid to C one month after he gets this written request. In this case the bill will read like this.

*Bill of Exchange*

Rs. 1,000/-

Stamp  
-/15/-

One month after  
Mr. C or order  
rupees one thou  
received.

To Mr. B

Accepted. Payable  
at the Imperial Bank of  
India, Benares branch.  
Sd. B

Allahabad  
Dec. 1, 1933

date pay to  
the sum of  
sand for value

Sd. A

Mr. A, who draws the bill, is the drawer or the maker of the bill; B, on whom it is drawn, is the drawee; and C, in whose favour it is drawn, is the payee. After properly drawing the bill, A will send it to C who will present it to B for *acceptance*. If B has no objection to paying the amount to C, as he will have none in this case, he will write the word "accepted" on the space provided for between the lines drawn across the face of the bill. As he has an account with the Imperial Bank of India, he will like C to receive payment at the Benares branch of that bank.

Every bill has to be *presented* to drawee for *acceptance or giving his consent to its payment*. Unless the bill has been accepted it cannot become valid. This bill is a *time bill* as one month's time is allowed to B at the end of which period he must



pay. As a matter of fact the customary 3 days of grace will be allowed in addition to the time mentioned on the bill. This time is to be calculated from the date the bill has been presented to B and accepted by him, not from the date of writing of the bill.

On being accepted, a bill becomes a *Negotiable Instrument* which can be used in payment of debt or can be discounted. C will receive payment after a month and three days; but if he wants money today, he may take it to a bank, probably his own bank, and have it discounted there i.e., get its present value after one month and three days' interest at the market rate has been deducted from the sum. Here *the bill not only clears* two debts, of B to A and of A to C, *it becomes an investment* to the bank and a convenient source of getting ready money to C.

This kind of bill allowing a period of time after which the drawee is expected to make the payment is called a *time bill*. A bill may be drawn to be paid for on presentation. Such a bill is called a *Sight Bill*. It is drawn exactly as the time bill except that in place of the expressions 'one month after date' will be substituted the

words 'on sight' or 'on presentation.' A bill of exchange serves as a means of payment, not only among persons residing in the same country, but also among persons belonging to different countries. In the latter case the service rendered by a bill—Foreign Bill of Exchange it is called—is greater, cheaper and more expedient. Payments of debts to persons belonging to the same country can be made by other means too, like sending money-orders or insurance remittances; but such means are either costly or inconvenient when payments have to be made to a foreigner in his own country. Postal rates are much higher for foreign remittances. At the same time a foreigner requiring payment of his dues in the currency of his own country cannot be paid by his debtor who uses a totally different currency. A foreign bill of exchange is the best means of payment in such cases.

*How a foreign bill of exchange works is  
detailed below*

Abdul Lateef . . . . .	Cawnpore . . . . .	Jugal Kishore
Exports hides		Imports tobacco
worth Rs.1,000		worth £75
Creditor to		Debtor to
Footwears Ltd., . . . . .	London . . . . .	Arcadian Tobacco Co., Ltd.

Abdul Lateef of Cawnpore exports hides worth Rs.1,000 to Footwears Ltd. of London, who are, therefore, debtors to Abdul Lateef. Jugal Kishore of Cawnpore imports tobacco worth £75 from Arcadian Tobacco company of London and is debtor to them to that extent. (At the present rate of exchange £75 is equal to Rs. 1,000). Abdul Lateef will draw a bill of exchange on Footwears Ltd. for Rs. 1,000 either in his favour or he may draw it in favour of Jugal Kishore if he requests Abdul Lateef to sell him a bill of exchange on some firm in London as he himself has to make payment to Arcadian Tobacco Co. of that City. The bill will be a time-bill probably 60 days or 90 days. It

will be sent to Footwears Ltd. if it is drawn by Abdul Lateef in his own favour and received back after it has been duly accepted. Abdul Lateef will most probably have it discounted with some bank at Cawnpore and get its present worth in cash. The bank will probably sell it to somebody else or wait till the date of maturity and receive payment from the drawee through some of its correspondent in London.

If it was drawn in favour of Jugal Kishore at his request, that is usually the course adopted by Indian merchants in buying bills, Jugal Kishore will make payment to Abdul Lateef—it being its discounted value—and having endorsed the bill in favour of his creditors, Arcadian Tobacco Co. will send it to them. They will present it to Footwears Ltd. for acceptance, and then either have it discounted at a bank in London, or wait till its maturity for payment which will be made by Footwears Limited.

Thus Abdul Lateef gets payment from Jugal Kishore instead of from Footwears Ltd., and the Arcadian Tobacco Company gets payment from Footwears Ltd., instead of from Jugal Kishore. Both the debts have been paid by one bill of exchange.

Abdul Lateef wanted payment in rupees—Indian currency, and he got that from Jugal Kishore. The Arcadian Tobacco Co. naturally wanted payment in English currency and they got it from Footwears Ltd. Each creditor received payment in the currency of his own country.

There was no need to send gold from London to Cawnpore and from Cawnpore to London. Thus the use of money has been economised.

Payment of debts has been completed at the lowest possible cost of sending one letter from Jugal Kishore to Arcadian Tobacco Co. A very cheap remittance indeed!

### HUNDI

An inland bill of exchange in India is called a Hundi. Hundi system has been popular among Indian merchants for ages and the establishment of commercial banks has further facilitated its use. Its functions are the same as those of a foreign bill of exchange, but it is used for the remittance of money for the payment of claims to persons or firms residing in India alone. Below is given in Roman characters the popular form of a Hundi.

Ramnath  
Gorkhpur  
Shyamnath



Number 17

..... Swasti Shree Ajmer Shubhsthane  
Shree bhai Mohan Lal Balmukund yatha yogya jog  
likhi Gorakhpur Seti Ram Nath Shyam Nath ka  
jai gopal banchne. Age hundi qita ek ap uper  
kiya rupayya 400 char sau ka adha rupayya 200—  
do sau ka doona dena. Yahan rakkha bhai Ram  
Kumar Sitaram pas. Pahunchni ke sath nam  
shaha jog rupayya hundi patay chalan chaukas  
karke dena.

Miti Bhadon Sudi Dashmi. Sambat 1990.

Hastakshar

Ramnath Shyamnath

**Banker's draft.** It is a bill of exchange drawn by a bank upon some other bank or its own branch at a different place whether inland or in a foreign country. Here the bank that makes a draft is the drawer and the bank on which it is drawn is the drawee, and the person in whose favour it is drawn is the payee.

If Balmakund of Agra has to send money to

Chandrabhan of Lucknow and does not want to bother about buying a hundi, he may go to a bank, make payment of the money he wants to remit and a little commission to the bank, and get a banker's draft. It will be drawn by the bank at Agra on its branch or some other bank at Lucknow, with which it has dealings, in favour of Chandrabhan. Balmakund will send it to Chandrabhan who will get the sum of money specified in the draft on presenting it to the local bank. Banker's drafts are generally sight drafts intended to make prompt payment.

*A specimen is given below.*

No. 16256

Agra Dec. 27, 1933

CENTRAL BANK OF INDIA LIMITED

Rs. 500/-

Pay to *Mr. Chandrabhan* ..... or order

Rupees *Five hundred only* .....

..... and place  
the same to account of the Central Bank Limited.

To, The Sub-agent

Central Bank Ltd.

*Lucknow, Aminabad*

For the

Central Bank Limited

*Ed. F. V. F*

The draft is drawn by the Central Bank Limited on its own branch at Lucknow. The expression 'under rupees five hundred and one' is intended to safeguard against the payment of any sum more than Rs. 500.

## EXERCISES

1. Give the meaning of credit and its foundations. Show that time is a very important element in the existence of credit.
2. What is an 'instrument of credit'? Explain the working of two of such instruments.
3. Write a specimen of promissory note and state whether a currency note is any different from a promissory note.
4. Have you any objections to treating cheques drawn by honest and wealthy people on very sound banks as good as currency notes? Give reasons.
5. What is a Bill of Exchange and how it differs from a hundi? Why should they be so popular when other means of payment are available to people?
6. Differentiate between 'sight bill' and 'time bill'. Has sight bill no time element in it? If so, is it not like a cheque drawn upon a merchant rather than upon a banker?



7. Credit creates currency. Credit economizes currency. With which of the above statements do you agree? Give reasons.

8. What different methods are available to you in making payment to a person residing in a distant city in India? Which one will you prefer and why?

9. Are the following recognized as money in India:

- (a) A government promissory note.
- (b) A cheque drawn on the Imperial Bank.
- (c) A hundi.
- (d) A ten-rupee note.
- (e) A pice.

10. Show that credit is the foundation of commercial and economic development of a country.

## Chapter XIV

### THE INSTRUMENTS OF CREDIT

Banks are the institutions of credit. Their main function is the creation of credit and its productive utilization. In modern industrial production the need of capital is great, so great that a producer on a large scale will usually depend upon borrowed capital to run his business. If he tries to raise necessary amount of capital as a loan from people who could spare it, he will not succeed to the extent as he can through a bank. The bank can provide him the required sum of money in one place and save him the trouble of approaching individual lenders. This service the bank will be able to render, not because it has a plenty of money of its own, but because it will borrow money from big and small lenders, collect it into huge amounts, and out of them lend to its own borrowers. The bank accepts deposits from people who have too small a sum to profitably employ it in their independent business or from those who have big enough sums but no business capacity to manage a business of their own.

A bank receives deposits in several ways. Sometimes the deposits are received on the understanding that they will not be withdrawn for a certain length of time, say for 3, 6, 9, or 12 months or for even longer periods. These deposits are called *Fixed Deposits*. The bank gives the depositors a notice when the time of such deposits comes to an end. The depositors are required to either withdraw their accounts or re-invest them, as otherwise they will not be entitled to any interest.

Money can be deposited under *current accounts* on which the depositor can draw any time without giving any notice to the bank. This privilege is not enjoyed in fixed deposits which may not be withdrawn before the expiry of the period for which the money was originally deposited.

*Savings Bank Deposits* are meant for the poorer clients to encourage them to save their little bit and earn some interest on that. The right to withdraw from savings accounts is allowed once or twice a week though there is no limit to the number of times a person may deposit fresh sums of money in their accounts.

Interest is allowed to the depositors on the

money they leave in deposits with the banks. A high percentage of the fixed deposits can safely be lent by the banks to their debtors as these deposits cannot be withdrawn by the depositors before the time fixed for withdrawal.

Because the bank can utilize a part of these deposits in lending money and earning interest on it, it can afford to allow a higher rate of interest to its fixed depositors than to its current account depositors. In receiving the current deposits the bank undertakes to honour the cheques drawn on them at any time and therefore it cannot take the risk of investing a considerable part of these deposits. This being so, the bank is not able to earn much on them, and consequently is not in a position to allow interest on them. By some banks that are in need of money as enough of deposits are not coming to them, a small rate of interest is allowed on current accounts also. Savings deposits can be used more than the current ones in investments, and therefore some interest is paid on them.

These deposits provide money to the banks which invest it in securities or lend to commercial houses or governments. Advances are made on the

security of commercial paper, bonds, stocks, shares, jewellery and goods, movable or immovable property and personal surety of men of means and credit in the market. Interest is charged on these loans, which form the main source of income to the banks. Bills of exchange and hundies are also discounted and this source is also a profitable means of income to them.

In addition to lending of money, a bank performs several other functions. It supplies inland and foreign means of remittance of money by issuing banker's drafts and accepting bills of exchange. A bank will act as a trustee or an executor of wills and decrees on commission. It undertakes the safe custody of valuable papers, jewels and ornaments, and charges remuneration on them. A government may entrust it with the function of issuing currency notes or raising loan for it. The bank will do that on the payment of some commission. The Imperial Bank of India, for example, acts as an agent to the Government of India by floating loans, receiving treasury deposits, making payments, transferring money from place to place, and does almost all that a central bank may be expected to do except that it does not issue currency notes.

The services of the banks are not confined to creating of credits and leading to a more profitable use of money; they help in economizing in the use of money too a great extent, by introducing the cheque system. Money is kept with the banks and when cheques are drawn against it, no money actually passes from the hand of the drawer to that of the payee. Only a book transfer is made from the account of the former to that of the latter. This economy can be multiplied if they are endorsed. A cheque is endorsed by the payee if he wants to transfer the right of receiving payment to one of his own creditors. This he can do by writing on the back of the cheque *Pay to Mr. . . . . .*, and putting his signature and the date. The greater the number of endorsements, the greater the number of payments that can be made by one cheque, and the greater is the economy in the use of money.

#### BALANCE SHEET OF A BANK

Banks are ordinarily joint-stock institutions with huge capital subscribed by share holders. They receive big deposits from private and public bodies and individuals, and the amount they invest either in government securities or private loans is very large. It all depends upon the individual

business of a bank. Joint-stock banks are required to publish half-yearly the directors' report and statement of accounts for public information. Individual bankers, though not bound to give publicity to their financial position, will maintain public confidence in them if their accounts are also issued after being properly made and duly audited.

The report and statement of accounts are passed in an ordinary general meeting, the notice whereof is given to shareholders who are expected to be present there personally or through a proxy. Usually at these half-yearly meetings dividend is declared, auditors elected and other business transacted.

*Balance sheet of the Benares Bank Limited as on June 30, 1932.*

LIABILITIES				ASSETS			
Paid up capital :—				Cash in hand, and with agencies of other banks	5,50,497	8	2
20,000 shares of Rs. 50 each fully paid up	10,00,000			Government securities	5,11,169	12	0
20,000 shares with Rs. 6-4 paid up	1,25,000	11,25,000	0 0	Interest accrued	5,264	11	10
Reserve fund		4,10,000	0 0	Loans	20,22,303	8	4
Deposits :—				Bills discounted and Pro. Notes	32,43,759	5	6
Fixed	60,45,831	1-10		Cash credits and over drafts	25,96,796	4	9
Current	4,81,065	10-9		Property account and fixtures safes etc.	4,72,787	9	0
Savings Bank	10,69,225	2-3	75,96,121 14 10	Sundries	3,85,932	8	5
Sundries		5,67,892	12 4				
Profit & Loss Account :—							
Balance brought forward	7,619	4-0					
Profit for the half year ending June 30, 1932	61,896	4-10	69,515 8 10				
Total		97,68,510	4 0		97,68,510	4	0

Consider a bank as a corporate body which gets shareholders' money and deposits which it is liable to pay. These and other dues like Provident Fund, Undrawn dividends, Profits undistributed, the bank holds for its owners and depositors, and it is its responsibility to pay up all those if needed. These are called its liabilities.

Assets are all the property and moneys owing to the bank. They may be in the form of cash securities, loans held by customers, buildings, furniture and every other belonging of the bank which it is holding or which are due to it. It is out of assets that a bank will meet its liabilities when so required.

#### EXPLANATION OF ITEMS ON THE BALANCE SHEET

**Capital.** It is, as has already been explained, share capital subscribed by shareholders. This bank started working with 10 lakhs of rupees but later finding it insufficient for its business issued a fresh lot of 20,000 shares but called up only Rs. 6¼ per share.

**Reserve fund** is made up of accumulated profits of the past. It is an item of strength of a bank on which it can depend in times of financial stringency.



**Deposits** under various heads have been explained.

**Sundries.** This item includes debts due to agencies, undrawn dividends, suspense account, provident fund etc. owed by the bank.

The last item shows the **Profits** out of which dividend for the past half-year will be declared and the balance carried forward.

On the assets side, we have **cash** kept to meet withdrawals of all kinds with which to advance loans and to discount bills. Fixed deposits cannot be withdrawn without notice. To the current and savings bank deposits, cash in hand bears a fairly high ratio of 35 per cent., a sound policy indeed. **Government securities** form the second line of strength. If there be great rush on the bank for withdrawal of money, the bank will meet the demand first with its cash and if more withdrawals are wanted, Government securities will be sold and cash realized. Next three items are various kinds of loans advanced to the public. **Overdraft** is a privilege exercised by depositors to overdraw their account to a certain extent in agreement with the bank. Bank charges interest on overdrafts. Suppose A is a good and permanent customer of the

bank. In case A has to make heavy payments on any occasion, and cash to his credit with the bank is not enough for the time being, he may arrange with the bank to overdraw his account by a certain amount. The extra amount is called the overdraft.

Under **property** is included the current market value of buildings and other property and furniture etc., owned by the bank. **Sundries** consist of minor items like value of unused stamps, and doubtful debts the payment of which is either not expected at all or is uncertain, and other items.

Profit and loss account for the half-year ending 30th June, 1932.

Dr.		Cr.
To Interest paid on deposits.	290,746 12 0	By Interest, Discount and Commission, Appreciation of securities, Rent, Exchange etc.
" Establishment Charges Rs. 40,764-7-7.		473,632-7-6
" General (House rent, Stationary, Advertisement, Lawyer's and Director's fees) Rs. 6,522-9-11.		
" Agency and Brokerage Rs. 1,326-3-10.		
" Postage and Receipt. Stamps Rs. 1,730-3-4.		
" Depreciation on Furniture, Fixtures and Property Rs. 5,645-14-0		
" Incometax provided: Rs. 5,000-0-0.	120,989 6 8	
" Net Profit for the half year ending June 30, 1932.	61,893 4 10	
Total	473,632 7 6	Total
		473,632-7-6

**Profit and loss account.** In this account are given the different sources of income earned by the bank and the various items on which the expenditure has been incurred in connection with the running of the banking business. The expenses are entered on the *debit side* and gains on the *credit side*. The items shown on it are self-explanatory and need no comment. The item of net profit entered on the debit side has been shown in the balance sheet and explained along with other items there.

**Appreciation of securities.** When due to increased dividends payable on the commercial paper held by banks in reserve, their market value increases, this rise in the market value of securities is called their appreciation and the amount by which a rise in price takes place is shown on the credit side as an item of profit. If the securities had depreciated, the net loss in their value would have been shown on the debit side as an item of loss.

### EXERCISES

1. Why are banks called the institutions of credit? Is it right to say that in creating credit they create capital?

2. Banks are merely channels through which money of the public passes back to them. Why should they be supposed to be borrowing money and lending it?

3. When a bank *lends* it does *not* give to the borrower so much of ready money; it simply authorises the borrower to draw cheques upto that amount. Is this process lending in the sense a person hands over Rs.100 to another on the promise to receive it back at some future date?

4. Explain clearly every source through which a bank collects resources ultimately to lend them to people. Can a bank lend out more than what it receives as deposits?

5. What is the bank rate? How can a bank pay interest on the deposits it receives and why should such rates differ?

6. What do you think to be the proper functions of a commercial bank?

7. Will the growth in banking facilities be helpful in increasing the investment habit and encouraging the industrial development of a community?

8. What is the balance sheet of a bank? Prepare a specimen of it and explain the items contained in it.

## Chapter XVI

### TYPES OF BANKS

**Central Banks.** The banking system of a country is centred round a big bank which acts as a banker's bank. This bank is called the central bank or the state bank. Just as general public deposit their savings with an ordinary bank and borrow money from it, similarly the ordinary banks maintain their accounts with the central bank. They keep a part of their reserve also with this bank to serve as a token of strength and solidarity. In times of emergency they depend upon it to help them tide over difficulties and in normal times they borrow moneys from it for their daily business. This borrowing is done by having their bills, hundies, securities or other commercial paper discounted with the central bank; exactly the same way in which a business man borrows from an ordinary commercial bank.

In addition to their reserve deposits, banks keep another account called the '*clearing account*' with the central bank which serves, along with its branches all over the country, as a "clear-

ing house" for all other banks. Through the clearing activities of the central bank the debts owed by each bank to others are cleared up by merely book-entries without the need of any cash passing between the several banks. Suppose there are two-banks A and B which maintain their clearing accounts with the central bank. Let A have ten depositors and B fifteen others of its own. If any depositor of a bank A draws a cheque on it in favour of any depositor of bank B, the payee will usually hand that cheque over to its bank B requiring it to collect the sum from A on his behalf. Likewise if all the ten depositors of bank A draw cheques on it in favour of the depositors of bank B, all of them will pass those cheques on to the bank B. The total of all these sums will be realised by B from A. But for this realization A will *not* have to send cash to B as B will not send these cheques to A requiring it to pay for them. On the other hand, B will send those cheques to the central bank where the sum will be debited to the account of bank A and credited to B's account.

Similarly the cheques drawn on B by its depositors in favour of bank A will be sent to A which will in its turn send these cheques to the central

bank where the sum total of these cheques will be debited to B's account and credited to A's account. As a matter of fact, on each day in the afternoon each bank sends to central bank its clerks with the cheques drawn in the favour of its clients on other banks. Each bank turns out to be creditor over every other and debtor to every other bank. The total debits and credits are compared and the excess of credits over debits is finally credited to a bank's account or excess of debits over credits are debited to its account. If a bank owes to others by way of cheques drawn on it the sums of 2, 7, 5 and 1 thousand rupees, the debits amount to  $2+7+5+1$  or 15 thousand. On the other hand, if other banks owe to it, say, 4, 3, 6 and 4 thousand for cheques drawn on them in favour of its depositors, its total credits amount to  $4+3+6+4$  or 17 thousand. The excess of credits of Rs.17,000 over debits of Rs. 15,000 i.e., Rs.2,000 will be credited to its account and other debts cleared up.

Another and more important privilege of the central bank is to provide currency to the country. Wherever there is a central bank in a country, it has been entrusted with this function by the government. And it is well that such a function

should be performed by a bank rather than the government. The reason is not that the government provision of currency is bound to be inefficient or objectionable on political lines, but because a bank being always in touch with the needs of the commercial community, will be in a better position to give timely help by increasing or contracting currency according to the requirements of business. Government action may be delayed due to cumbersome machinery of administration and the trade and commerce may suffer in the intervening period. Lastly, it is not always quite certain that the currency policy of a political body will not be affected to any degree by its political colour.

On account of its very important position as the banker's bank, the central bank is not expected to compete with commercial banks for ordinary banking business. It should rather be a source of assistance and strength to all the banks in the country. It works as a custodian of the interests of all and not their competitor. It conserves the monetary resources of the country and regulates foreign exchanges and the flow of precious metals.

India is going to have its own central bank working by 1935. It is proposed to be a share-



holders' bank as opposed to Government bank as none of the shares of the bank will be owned by the Government. Of course, the Government being the biggest single client of the central bank, and having such great interests in the proper working of the bank, it will have a hand in the administration of the institution through its representatives.

**Commercial Banks.** Most of the joint-stock banks are commercial banks doing the type of business that has been discussed in the preceding chapter. Their main function is to finance commercial operations by granting short term loans either on the security of stocks and shares or by discounting bills. If the payee of a bill of exchange which is to mature after a certain period of time, desires to have ready money for it, he can take the bill to a commercial bank which will hand over to him the present worth of the bill. The bank will realise the full value of the bill from the drawee at maturity. This is called "discounting" of the bill and is a common way of advancing loans with commercial banks.

There are several noted commercial banks doing business in India, the important ones of them being, the Central Bank, the Punjab National Bank,

and others.

**Exchange Banks.** As the name suggests, the exchange banks specialize in financing the international trade between countries. Dealing in external bills or financing foreign trade requires special ability. Though some of the mainly commercial banks deal in foreign exchange business, it is chiefly specialized by exchange banks. Exchange business requires heavy capital and involves great risks and it is, therefore, beyond the capacity of small commercial banks with tiny capital and no specialized knowledge of working exchange between different countries.

Exchange banks have their branches scattered over various countries or have their agencies and correspondents who receive or make payments on behalf of them. Their business is to provide for the importer of a country the currency of the country of the exporter who will accept payment in his own currency alone. This they do by selling 'exchanges or foreign drafts. They also discount foreign bills of exchange and thus render the same type of facilities to the exporter as a commercial bank does to an indigenous merchant. There is nothing to prevent them from doing other com-

mercial business done by a commercial bank, yet their chief province of business is confined to foreign exchanges.

Yakohama Specie Bank and Lloyd's Bank are instances of exchange banks in India.

**Industrial Banks.** Commercial banks allow only short term loans. They receive current deposits on which the depositors can draw without any notice; they cannot take the risk of lending any appreciable part of such deposits for more than a week or a fortnight. Day to day or weekly loans are the common features of short term lending. They can manage to lend portions of the fixed or time deposits for three or six months. But they are unable to lend for longer periods.

To help in starting a new industrial business or to support one that is decaying for want of funds, big loans for long periods are necessary. Such loans are supplied by Industrial Banks alone. These banks lend money on the security of buildings, raw material or finished commodities or other property and interests of industrial concerns. Or, they may *underwrite* the shares and debentures issued by these concerns.

**Underwriting** means lending one's name to a

loan floated by a client. Suppose a loan for Rs. 5 lakhs has been floated by a firm entitled the Potteries Limited, and it has been underwritten by the Industrial Corporation. The public may gladly subscribe to the loan as it is supported by Industrial Corporation, a big and sound concern of long standing. It is the good-will of this corporation that is encouraging people to lend their moneys to Potteries Limited, a minor company. The Industrial Corporation will charge some commission for this lending of its name to the other firm. In case the loan is subscribed to the extent of Rs.  $3\frac{1}{2}$  lakhs alone, the balance of Rs.  $1\frac{1}{2}$  lacks will be contributed by the underwriting firm.

To enable themselves to advance long term loans, the industrial banks receive deposits for long periods, say 5 years. They may guarantee the loans of an industrial firm in which they are interested or represented. They may also float a new enterprise supporting its cause by lending money to it or under-writing its shares as explained above.

There is a great need of industrial banks in this country. A few of them, that were floated some time ago, have come to grief. The Tata Industrial Bank did some business for five years

but was ultimately wound up and merged in the Central Bank of India in 1923.

**Agricultural Banks.** Apart from financing commerce and manufacture, there is a vast field for the expansion of banking facilities in assisting agricultural industry. Banks that do such business are of two types: either they are Co-operative Banks—Agricultural Co-operative Credit Societies formed by the producers themselves—, or Land Mortgage Banks constituted on joint-stock lines.

Co-operative credit societies perform many other functions of social advancement in addition to providing much needed capital to the cultivators or the artisans. There are several varieties of them either specializing in production or distribution or sale activities or combining these functions in one. These societies collect their working capital from deposits received from public or banks along with from their members who have to borrow their shares. But the lending business is confined to their members alone. Small loans are allowed and for short period only. They are to be used for productive purposes alone though at times some money is lent for consumption purposes in special

cases, or for redeeming the old debts. They cannot provide large sums for long periods to help the farmers introduce big and permanent improvements on their lands. Such societies were started in India after passing the Co-operative Societies Act of 1904 and at present numerous societies are to be seen working in every province.

**Land Mortgage Banks** have been started to extend the facilities of long and plentiful loans to the farmers—a service that the co-operative societies cannot render. They accept land as a security for loans to the borrowers. For their capital, they issue shares like joint-stock banks and issue debentures on the security of the land mortgaged with them. The debentures are to be redeemed after long periods. The loans that they advance to the cultivators are to be repaid by instalments running over long periods say for fifteen or more years.

Co-operative land mortgage banks have been started in several provinces in India, the lead having been given by the Punjab where a bank was first established at Jhang in 1920.

**Private Banks.** Private or individual bank-houses, as contrasted to joint-stock banks,

abound in India. Some of them follow the western methods of banking, while most of the *shroffs*, *sahukars* and *mahajans* are petty money lenders and pawn-brokers. They carry on their business in the old way. They are noted for exacting high rates of interest from the needy borrowers who may borrow from them for consumption purposes too without furnishing any dependable security. Though their methods cannot always be approved, they fulfill a great need specially in the country side where other banking facilities are absent but the requirements of the farmers for capital are acute.

**Postal Savings Banks.** Governments in every country provide banking facilities to people of scanty means by working postal savings banks. These banks are meant not for lending money to the public, but borrowing money from them. A sum as small as anna four is good enough with which to open an account in India. There is usually a limit upto which an individual can deposit money in his account in the course of a year and also no more than one or two withdrawals are allowed in a week. Though the governments can collect good sums by small individual contributions, these banks

are mainly intended to encourage the habit of thrift and economy among the comparatively poorer classes who incidentally gain some profits by way of interest.

## EXERCISES

1. What is 'clearing house' system? Does it lead to any economy in the use of money?

2. What are the main functions of a central bank? Have you any objection to such a bank participating in ordinary commercial business?

3. How do the exchange banks help in remitting money to foreign countries? Does exchange business involve any special risk, not borne by inland commercial banks?

4. What features are peculiar to agricultural finance? Why are the ordinary commercial banks not in a position to finance agricultural improvements? Can you suggest any alternative sources of supply of cheap capital for the use of the farmers.

5. What are land mortgage banks and in what respects do their activities resemble, or contrast to, the business of industrial banks? Can you make out reasons why industrial and land mortgage banks are so



few and doing so little business in the country? Are there any possibilities of their development in the near future?

## DISTRIBUTION

### Chapter I

#### THE PROBLEM OF DISTRIBUTION

Production of wealth in modern times is based on specialization. A study of industrial organization makes it clear that with the development of economic activity, combined effort in production assumes greater importance while individual production recedes into the back-ground. It will be too much to say that one-man-businesses have outgrown their importance, as there will always be some scope for them somewhere in the economic world. Yet it is true that most of the wealth that is produced to-day is the result of combined action of many who have contributed to its creation in their specialized way.

If production is organized on the individual ownership system of the simplest type—as in the family economy—where all the factors of production are supplied by the owner himself, there is no difficulty in pointing out the person to whom the wealth produced should go. But the difficulty of calculation of the net wealth created and the por-

tions that should go to different factors, increases with growing complexity of combined production. In a big business now-a-days all the factors of production are not supplied by an individual or the family. Though the functions of organization and enterprize may be combined in the owners, land and labour specially are supplied by other persons. In joint-stock companies, this specialization is carried much further and a single factor is contributed by a particular set of people. The wealth that is produced by the combined effort of all the factors is the result of their productive services and consequently they are the rightful claimants to its appropriation. But the factors themselves being inanimate things, they cannot receive payment for their services. The payments are made to the persons who have supplied the several factors. The payments for the services rendered by land goes to the landlord who has supplied land; the payment for the services of labour goes to the labourers who made that effort; and so on. These suppliers of the factors of production are called the agents of production.

When specialization in the contribution of the factors of production has reached the present stage,

it is not enough to know that the product belongs to all the factors or their agents taken together, but one must be in a position to know how much of it should go to individual factors or their contributors. That is the crux of the matter. The distribution of wealth has become a practical problem of great importance and it has become so because of specialization in industry.

#### WHAT IS TO BE DISTRIBUTED?

It is very simple to answer the question 'what is to be distributed' by saying that the five factors of production can claim as their joint remuneration only as much of wealth as they have jointly helped to produce. But it is difficult to estimate accurately this net amount of wealth produced in any period of time. Unless it is known exactly how much there is to be distributed, the factors of production cannot be properly and adequately remunerated. The conditions of actual allotment of their shares do not show that every factor is receiving its just due in payment of its services. Even while production is continuing from day to day, interim payments are made to some of the agents as they cannot afford to wait long enough to see exactly how much of that wealth has been pro-

duced and then to claim their share. Labourers receive their wages weekly, fortnightly or monthly; capitalists receive their interest quarterly or half-yearly. They are paid a lump sum as final payments for their services whether this sum be a proportionate share of the net wealth produced at the end of the year or not. Yet, the balance sheet of a firm is made at the end of the year; and it is only then that a true estimate can be prepared of the net income earned by the firm. A firm takes stock of every kind of income it has been earning in the course of a year and deducts from that total the expenses incurred during the period; the balance is the net wealth produced in the year. This is the net income of the firm that should be finally allotted to different agents of production.

**National Dividend.** Let us have a wider outlook and consider how to find out the income of the society or of the nation, called the national income or national dividend. It has been defined as a net aggregate of commodities, material and immaterial including services of all kinds that have been produced in a year by the labour and capital of a country working upon its natural resources. National income according to this definition, should

be measured in terms of goods because it is the goods that satisfy human wants immediately, and upon them depends the real economic well-being of the nation. Income in terms of money may be good enough for calculation and comparison, but money income is only a means to secure the income in terms of goods.

The best way to calculate the national income earned by a community will be to find out what new goods, material and immaterial, have been produced in the course of a year and to what extent the old stock has been increased. But it is rather a hard thing to do. The simplest plan to adopt will be to measure the amount of wealth a nation possessed at the beginning of any period, preferably a year, and deduct it from the amount it came to possess at the end of that period. The balance will be the annual national income. Suppose, for example, the money value of every form of wealth owned by Indians individually and collectively on January 1, 1933 was Rs. 1,000 crores, and another similar estimate on December 31, 1933 showed it to be Rs. 1,050 crores; then Rs. 1,050 crores *minus* Rs. 1,000 crores is the money value of wealth produced in the course of the year or it is

the Indian National Income for 1933. It will be a national problem to distribute this amount among different groups of people who have been responsible for the creation of this new wealth.

#### HOW TO DISTRIBUTE THE JOINT INCOME

After knowing what to distribute and among whom to distribute, the more important problem remains that of 'how to distribute.' It is true that greater the national income earned in a period the greater should be the well-being of a country, but this depends upon the manner in which the actual distribution of income takes place. Upon the proper distribution of the national income depends the maintenance of a continuous flow of the factor of production to the industry and also the steady progress in the growth of national income in future. If a factor has not been fully and properly remunerated, its supply will diminish and also its efficiency and this diminished and inefficient supply will be a hindrance in the proper adjustment of the nation's productive activity. If the labourers receive less than their due share, a lowering in the standard of living will diminish the national dividend and as a consequence the future share of it that can go to other factors too will diminish.

The portion of national dividend that should go as remuneration to a factor should be enough not only to keep it in a fit state of efficiency, but also to ensure its regular and increased flow into industrial production. If the supply of a factor of production is fitful and irregular, smooth and steady running of the productive activity will not be possible. If the flow of the factor is inadequate and does not increase as time passes on, no industrial development and growth of national income will be possible.

Keeping this principle in view, it will be our concern to study in the following chapters how the distribution of income takes place.

### EXERCISES

1. Why has the question of distribution become a practical problem in modern industrial production? Can you think of any stage in the economic development of man when this problem was of no importance?
2. What is national dividend and how do you calculate it? Has an increase or a decrease in its quantity any bearing on the economic well-being of the nation?
3. If national division grows, it will automat-



ically lead to the material improvement in the conditions of every member of the society. Do you agree with the statement? Give reasons for your answer.

4. The problem of distribution is not only to distribute the earnings but to distribute them fairly on those alone who have contributed to their creation. Explain the conditions set in the above statement, that will make the distribution of earnings equitable.

5. Prove that the share of the national dividend that should go to a factor must depend not only on its quantity but also on the quality of its services rendered to the cause of production.

6. What damages are likely to happen to the growth of economic life if the problem of distribution is mis-handled? Give the principles that should be kept in mind while distributing the earnings and point out any case where you think these are not faithfully observed.

7. What do you study under Distribution? What is it that is divided? Explain the relation of national income to the welfare of an individual and of a community.

## Chapter II

### RENT

**What is Rent?** Popularly speaking rent is the payment made for the use of land, landed property and buildings, and other material agents such as mines and water-power. This meaning gives one to understand that only the income, which the owner of land in various forms derives from letting it on hire, is called rent. But in economics, rent is the income, either in money or in kind, which the owner of land derives whether he uses it himself or lets it to somebody else. Thus economics attaches a wider meaning to 'rent' than what people ordinarily understand by it.

Land when used for farming or building is not exhausted or consumed away. It remains there and continues giving certain services to people who use it. Whether the person himself using it is the owner or a tenant who holds it on hire, the flow of those services continues.

When agricultural lands are let on hire or building sites let on long leases, the possessor can for that time continue enjoying benefits or services of

productivity or situation of land. After the lease expires, land with its indestructible powers in tact is taken over by the owner. A fisherman who hires a pond, catches fishes out of it, and a fruiterer who hires a garden, plucks fruits off the trees. For all that they draw out of the pond or the garden, these sources of wealth are none the worse; they will still further yield their resources and that too irrespective of being exploited either by the owner or a tenant who acquires possession only temporarily. The bounty of returns from land does not differ from the owner to the tenant, though it is true that a more skilled and efficient producer will get richer returns than a less efficient one. In usual practice the right to enjoy the benefits or draw wealth from the gifts of nature is let for a period of time. It may differ from a short period of a season to that of 99 years, yet the calculation is made on the basis of a year. Rent is the name given to the material value of these services enjoyed in a period of time.

#### WHY RENT IS PAID ON AGRICULTURAL LAND

Though in towns and cities and all along the country-side land pays high rent, there are certain tracts of land which bear no rent at all. There are mountain tops and bottom of the seas, and endless

stretches of desert and snow-covered regions which bear no rent just because they are of little use to man. It is the *greater desirability* of town and country-side on account of which rent is paid for land there. And if a piece of land pays higher rent than another, the former piece must have more advantages than those possessed by the other piece. As a matter of fact *rent is the payment for the differential advantages of fertility and situation* which a piece of land enjoys over the other.

All land is similar in area and solidity but it differs in fertility and situation. Fertility is the result of chemical and mechanical ingredients of the soil combined with its extension. It is judged on the basis of the quality and amount of a crop that can be raised on a plot of land with a certain amount of investment on it. Some plots of land are more fertile than others; they either produce more crops from the application of the same economic effort or require less effort to produce the same quantity of crops, than what is wanted on less fertile plots. Some lands enjoy a better situation or geographical location and they can serve the purpose of business or agriculture better than others less favourably

situated. If a field is at a great distance from the neighbouring market, it will cost more to bring its produce to the market than the produce of another field which is comparatively nearer. If an area is served by railways which quickly transport its produce, it has a better situation than other area that has to depend on slow road transport. Quick and cheap transport, and the ease of marketing goods are the two factors which increase the advantages of one plot of land over another of equal fertility. On account of these advantages of situation enjoyed by one plot of land over another, the produce of the former can be sent to longer distance at a low cost or can find a good market near at hand. Even rich returns of crops from highly fertile soil at a distance of, say, a hundred miles from the nearest railway station, will not be as paying as the returns from a piece of land situated next to that station. Greater distances mean higher transport charges that will in their turn increase the cost of production and lower the margin for gain. If a more fertile land is served with quicker and cheaper means of transport, and possesses better marketing facilities, its advantages over the less fertile and poorly located land become greater and more dif-

ferentiating. Under such circumstances there will be a greater difference between the rent paid on the superior quality and that on the second quality land.

**But it does not mean that rent will not exist if there were no differential advantages enjoyed by the superior plots of land.** Suppose wheat lands of different degrees of fertility and situation were available. Will the lower quality lands be cultivated if the superior plots can produce all the wheat that people want? Obviously not. As the returns due to the doses of labour and capital applied to superior lands will yield richer returns, people will cultivate them rather than the second quality lands. If the demand for agricultural produce increases as a result of the growth of population, more and more of superior plots will be brought under cultivation. This process may continue if the supply of superior quality land is unlimited. And under the circumstances each plot will be cultivated upto the point of maximum returns and no further. As soon as the point is reached, a greater demand for the agricultural produce will lead to the cultivation of a fresh plot of land, rather than to the ap-

plication of more doses of labour and capital to the same plot. Here the question of differential advantages does not arise but rent will accrue on these superior plots of land all the same.

If the Law of Constant or Increasing Returns had been applicable to agriculture, no more than a small area of land would have sufficed to provide food for the entire population. Unfortunately it is not so. Now just because the land of superior quality is limited, and also because agriculture works under the Law of Diminishing Returns it becomes a necessity to cultivate the superior plots beyond the point of maximum returns when the demand for agricultural produce increases. Their cultivation beyond this point results in a surplus—excess of total returns over the cost of production—which is their rent. This surplus on the superior plots will accrue whether the inferior plots are also cultivated at the same time or not.

Thus rent, as it is understood in the sense of economic surplus or the excess of total produce over the cost of production, will accrue because of the two factors working simultaneously: the limitation of the supply of superior grade land and the operation of the Law of Diminishing Returns in agriculture.

**What determines the amount of rent.**

When an increase in the demand for agricultural produce makes it profitable to apply more and more doses of labour and capital to superior plots of land, it will also be worth while to start cultivation on the inferior grade land. Though the returns from the inferior land on the application of the first dose will be less than the returns the superior grade land yields on first application of a dose, it may and will yield more than the returns to some of the subsequent doses applied to the superior plot. It means that the extensive cultivation, or bringing in more and more of inferior plots of land under cultivation, is possible along with the intensive cultivation or applying more of labour and capital to the same plot of land.

An example will clear the point.

Suppose A, B, C and D are the plots of land arranged in order of their quality. The returns that they yield in seers of wheat to successive doses of labour and capital are shown below:



## Plots of land in descending order of quality.

Doses of labour and capital costing 20srs.	A	B	C	D
1st	50	40	30	20
2nd	40	30	20	
3rd	30	20		
4th	20			

As A is the best plot of land, cultivation will commence on it. The first dose of labour and capital costing 20 seers yields a return of 50 seers. Population increases and so the demand for wheat. Second dose is applied to A and it brings in 40 seers. Suppose a still greater demand has to be met now. If third dose is applied to A it produces 30 seers. Why not cultivate the B plot of land? Second dose applied to A could have been as profitably applied to B, but it is the point of indifference to the cultivators. The returns from the application of the second dose will be the same or 40 seers whether it is applied as the second on the A plot or as the first on the B plot. If no advantage

is to be gained in cultivating another plot of land along with one already cultivated, the farmer will decide, for the sake of saving the labour of management, not to cultivate the fresh plot of land. He will intensively cultivate the A plot rather than extend the cultivation on to B plot. But in deciding over the application of the third dose, he has no choice left. As the third dose applied to B plot as its first dose yields 40 seers, 10 seers more than when applied to A plot in succession to the second dose on it B plot will be cultivated at this stage though it is a land of inferior quality. The next dose may be applied either as the third on A or as the second on B or as the first one on a still inferior land, plot C, because in each case the returns will be 30 seers. But this is true that if after applying two doses on A plot and one dose on B plot, there be the question of applying three more doses of labour and capital, all of them will not be applied on A or divided over A and B alone. C plot must have its claim to at least one dose, as otherwise the returns from A or B due to the last dose will be less than 30 seers, the returns which C will yield from the first dose applied on it.

In this way cultivation is carried on intensively and also extensively, both processes progressing side by side, till in each case the point of marginal returns is reached. As 20 seers is the cost of a dose of labour and capital more and more doses will be applied on each plot of land till the returns on each come down to 20 seers.

The extensive cultivation is undertaken because in the first case the superior quality land is limited, and in the second place the Law of Diminishing Returns operates in agriculture. Even if the superior land had been limited but had not been liable to this law, people would have never found it necessary to extend cultivation, as more intensive cultivation would have resulted in ever increasing crops raised there. As the superior land is limited and also agriculture works at this disadvantage of diminishing returns, the inferior plots have to be cultivated and each upto the margin like the superior plots.

Let us calculate the rent accruing on A plot of land. Rent has been called the *economic surplus* i.e., surplus or excess of the total produce of a plot of land over the cost of raising that produce. The cost of production includes the expenses of

production which are composed of payments made to the contributors of the factors of production (excluding the hire-charge of land in agriculture) and normal profits which the farmer or producer can claim as a remuneration for his own contributions to the business. The total produce from the plot A cultivated upto the margin is  $50+40+30+20$  or 140 seers of wheat. The cost of four doses is  $20 \times 4$  or 80 seers of wheat and the Economic Surplus or *True Rent*, therefore, comes to  $140-80$  i.e., 60 seers of wheat.

The surplus on B plot of land calculated in the same way will be  $(40+30+20)-(20 \times 3) = 90-60$  or 30 seers; and surplus on C plot will be  $(30+20)-(20 \times 2)$  or 10 seers. There will be no surplus on D plot of land as here the produce and cost of production are equal. B and C plot of land will bear 30 seers and 10 seers as rent while no rent will accrue on D plot of land. It will be called the marginal land or no-rent land. It is on the margin of extensive cultivation as any other plot of land of inferior quality than D will not produce enough wheat to meet the cost of production.

**The changing Margin.** A plot of land

will not always remain a marginal land. *D plot is marginal so far as wheat cultivation is concerned.* Although a poor land for wheat growing, it may become a superior quality land if used for growing maize, as maize crop does not require such high fertility as is required by wheat. Then it will be a land above the margin of maize cultivation and will give some surplus and consequently bear rent. It may also become a land much above the margin if it comes to acquire good situation or is used for building purposes.

**Change in price and the position of marginal land.** A slight rise in the price of produce may change the position of D plot of land from the marginal to a super-marginal one. Thus far the cost of cultivation and the value of produce have been calculated in terms of grain. Let us introduce the element of money in these calculations. Suppose wheat was selling at 10 seers a rupee. On this basis the returns from A plot of land were worth rupees 5, 4, 3, and 2 successively when the money cost of each dose was Rs. 2. The D plot received only one dose costing Rs. 2 as the money value of produce was Rs. 2, just enough to meet the cost. Now, if the price of wheat rises to, say,

8 seers a rupee, the marginal dose will no longer remain marginal, as the *money cost of the dose remaining the same as before*, its yield will be worth Rs. 2-8. It will become profitable to employ more doses on each plot of land so as to equalize the cost of the last dose to the value of marginal returns. The D plot will be no exception to this; it will begin to pay rent as some profit will be gained from its cultivation, 2|8 less Rs. 2. At the same time it will be worth while cultivating a still inferior plot E which may at least yield 16 seers of wheat, just enough to meet the cost of the dose. Thus the margin of cultivation has extended and D no longer remains the marginal land. It becomes a plot above the margin of cultivation.

Likewise, if the price of wheat falls, say, to 15 seers a rupee, the cost of the dose remaining the same, the third dose on A becomes the marginal as the money value of the yield of 20 seers from that dose will be Rs. 2. On every plot of land the dose yielding 20 seers will be withdrawn and cultivation will stop at the dose yielding 30 seers of produce. If D plot is cultivated, the price of its yield will be only Rs. 1-5-4 pies which will mean a net loss to the farmer. D will not be cultivated as it is not

worth while. C becomes the marginal land with one dose applied to it and D becomes the sub-marginal land or the land below the margin.

It will be clear from the above discussion that a rise in the price of the produce leads to an advance of the margin both intensive and extensive, and a fall in its price leads to the contraction of the margin both extensive and intensive.

If there is no change in the price of the produce, the margin of cultivation will remain unaltered, the same number of doses will be applied to each plot of land and the same land will remain the marginal land, provided the land is used for the cultivation of the same crops and no improvements are made on them. When the margin remains the same, the surplus enjoyed by any superior plot will remain the same. This true rent or economic surplus will be enjoyed by the owner if he cultivates the plot himself or to the tenant if he hires the land from the landlord. If the landlord cultivates the plot himself he appropriates the entire surplus; if the land has been let on hire, this surplus will be the maximum upto which the tenant can pay the hire-charge for the land. How much he will actually pay depends upon the conditions of demand for

and supply of land of that quality in the neighbourhood.

**Contract Rent.** Demand for land arises from the demand for the produce of land. In new countries, which have been newly colonized, the population is sparse and the amount of agricultural produce required to maintain the low population is necessarily small. The demand for land for cultivation is consequently low.

There is one more reason why in new countries the demand for land is not so great. The people that colonize new regions, though possessing plenty of the virtues of enterprise, hardihood, honesty and perseverance, lack capital. In the absence of capital agriculture cannot be carried on either extensively or much intensively. People desire to possess the best lands first and even that quality of land can be had abundantly. The demand being so low and the supply being so great, the rent paid by the tenants is bound to be less than the economic surplus. The land owners on their part will feel contented with such low rents, as they will not be able to cultivate, even if they wanted to, all the extensive acres that they own.

As population increases, more of land will be



needed to produce the increased requirements of the increasing numbers. At the same time, because the rents have been low and profits from agriculture high, agriculture will be taken up by greater number of men who seek profitable occupations. Thus demand for land will increase and supply of land remaining the same, the rent that the farmers will have to pay will be forced up due to competition among them.

This amount of rent which the tenant actually pays and which is fixed by mutual agreement or contract between him and the landlord is called the *contract rent*. The contract rent will be high if the demand for land is high; it will be low if the demand is low. Supply of land in each case remains the same. In fact the supply of land is fixed for all times. But in spite of a high demand for land, ordinarily no tenant would like to pay for land more than the surplus it gives him. If he consents to pay more than the surplus it gives him, he will be paying the excess out of what is called his normal profits. Expenses of production must be paid, as others who help the farmer by rendering some services will not forego their shares; and if due to excessive competition for land the

farmer has to pay more than the economic surplus, it must reduce the remuneration for his personal contributions called normal profits.

When the rent charged by the landlord exceeds the economic surplus, and the cultivator decides to stick to his land, he does so because either he prefers to stay at his home while leading a poorer life, or that he is unable to find any other occupation where, by his personal labour and capital, he would succeed in producing any more than what he earns on his land. There may be acute depression in every other business that he can possibly undertake with his scanty means, or his love for home may prove too strong to be shaken by a little fall in his standard of living. Such cases of excessive rent are to be met with in those countries which are very densely populated—India and China—with ignorant, poor and unorganized tenantry, and where pressure on land is not relieved by any other form of industrial production. Where employment is provided in various industries and distribution of population among occupations is well-balanced, and where people can easily move from a less remunerative occupation to a more profitable one, there the rent charged

by the landlords will not exceed the economic surplus.

### EXERCISES

1. Which of the following definitions of rent do you prefer and why?

(a) Rent is the payment made for the use of land, and other material agents of wealth-production.

(b) Rent is the name given to the material value of services enjoyed from land.

(c) Rent is the payment for the differential advantages of fertility and situation which a piece of land enjoys over the marginal land.

2. What is meant by a superior grade land? Is fertility an element of land so that it is indestructible?

3. Are the differences in fertility and situation enough to justify rent on the superior quality land?

4. What are intensive and extensive cultivations? Show that when it is profitable to intensively cultivate the existing lands, it is also profitable to extend the margin of cultivation.

5. What is the marginal land? Compare the idea of marginal land with that of marginal dose in production and marginal unit in consumption.

6. What is Economic Surplus? How is it calculated? Can you calculate the economic surplus or true rent on superior land on the basis of the marginal land?

7. Is the position of marginal land fixed once for all? What factors displace the margin one way or the other?

8. Distinguish 'contract rent' from 'economic surplus' and point out that the former is limited by the latter.

9. What do you think to be fair rent? Give reasons for your opinion.

10. Define 'rent'. Will rent rise if all lands were equally desirable? Show how rent is measured.

11. Will rent exist if (1) all lands were equally fertile (2) the cultivators of land had been the owners of land?

12. Has the shifting of margin of cultivation any influence on the rent of superior land?

## Chapter III

### RENT (*continued*)

**Rent and cost of production.** Cost of production, as explained in an earlier chapter, is composed of two groups of items—the expenses of production and the normal profits. Under the head, normal profits, are included the remunerations that the producer should receive for his personal contributions, and the expenses are made up of the payments that are made to outsiders that contribute other factors (except land, in calculating the cost of cultivation). The remuneration for the contribution of land or the charge for land, is calculated to be the excess of the total returns over the cost of production of these returns. This being the surplus over and above the cost of production cannot form the part of the same cost. Therefore it is evident that rent does enter into the cost of production.

The position of the contract rent is different. In any kind of productive business when a statement of income and expenditure is prepared to find out if the business has been a source of a net

gain or loss, among the items of expenditure rent of the shop or the factory or any space or building is included along with other items. There the contract rent has as clear and an independent identity as the other items like wages or interest. There the question of the calculation of true rent does not arise. It is fixed and definite and has got to be paid to the landlord before any produce of the business has been realized. The total produce may or may not come to the forecast made. It may not even be enough to meet fully the several items of expenditure including the contract rent which will nevertheless be paid along with the other items. It is clear therefore that the contract rent enters into the cost of production as much as any other item when the problem before the farmer is to find out the net gain or loss to him from agriculture.

Farming is as much a business as any other, and when the balance sheet is being made for a farm, rent must be included in it as also other items of expenses. What is meant by saying that rent does not enter into cost of production is that once the amount of rent that a farmer has to pay, has been fixed, he need not consider it when he thinks of

applying extra doses of labour and capital. It will make no difference in the amount of rent paid by him whether he applies any extra dose or not. If he finds that the returns from this extra dose will meet his expenses and will bring him normal profits he will apply the dose, otherwise not.

**Rent and Price of the produce.** The price of a commodity is determined by its demand and supply in the market. If there is any change in either of them the price will change. Rent that accrues on a plot of land producing any crop is only a part of the supply of that crop. The total produce of the plot is divided between the cultivator who receives his cost of production, and the landlord who receives the surplus over this cost of production. If the share of the landlord increases, it means that the division of the produce is more favourable to him. He gets more and leaves a lesser amount to the farmer. If the share of the landlord is reduced, the new division increases the share of the farmer. But whatever the division the total supply of the produce remains the same, though the amounts that come to the market from the two sources have changed. Suppose, if the total produce be 50 seers of which the cost of production

being 35 seers, the share of the landlord is 15 seers. If the share of the landlord is increased, or the rent is higher, say, 20 seers, the only alteration that has been made is that the landlord becomes the source of 20 seers of the supply instead of 15 while the farmer can bring only 30 seers instead of 35 seers to the market. But the total supply of the produce remaining the same and demand unaltered, the price of the produce in the market will not change. The same thing will happen if the rent falls, say, to 10 seers. The landlord will be supplying 10 seers while the supply from the side of the farmer will be increased to 40 seers, yet the total supply will be unchanged at 50 seers and so also the price.

But every change in the value or price of the produce will suffice to meet the cost of a dose of labour and capital with the result that the surplus will be increased. If the price falls, then the amount of produce needed to pay for the cost per dose will be greater and the surplus or rent will be less. A rise in the price of the produce will lead to much higher rents than what appears at the



first sight. When the cost per dose is diminishing the margin of cultivation will be extended. The sub-marginal plots of land will be brought under cultivation and the super-marginal plots will be cultivated more intensively. In either cases the surplus or the rent will increase in quantity. This increased quantity will fetch higher price in the market. Thus the money value of rent will be doubly increased.

Referring to our previous plot A, the returns are 50, 40, 30 and 20 seers, and the cost per dose is 20 seers. Suppose the price of the produce is 5 seers a rupee. The total produce of 140 seers is worth Rs. 28; the money cost being Rs. 16 the rent will be Rs. 12. If the price rises to 4 seers a rupee, 16 multiplied by 4 or 64 seers of the produce will suffice to meet the expenses on the four doses. The surplus will be 140—64 or 76 seers which will be worth 19 rupees. The rent has increased from Rs. 12 to Rs. 19 following a rise in the price of the produce. If, on the other hand, the price of the produce falls, and it is, say, 6 seers a rupee, the part of the produce that will be required to meet the cost will be 16 multiplied by 6 or 96 seers, leaving a surplus of only 44 seers which will

be worth Rs. 7-5-4 only.

To summarize the effect of changes in the price of the produce on rent, a rise in the price of the produce will result in higher rents, and a fall in the price will result in lower rents.

The rise or fall in the money rents will be much higher if the effect of rise or fall in the price of the produce on the margin of cultivation is also considered. As pointed out in the last chapter, a rise in price will lead to the advance of margin as now even the lower yield in crop will suffice to meet the cost of the marginal dose. Economic rent being greater in quantity will be worth much more in money when the price has gone up. On the contrary, a fall in price of the produce will lead to a contraction in the margin of cultivation and thus the economic surplus will be reduced. This reduced economic surplus will be worth much less in money when the price has gone down.

**Effect of improvements in agricultural methods on rent of agricultural land.** When improvements are introduced in agricultural methods, they take the form of the employment of better tools and implements, better ploughing leading to the preparation of finer mulch, making

of *bandh* to store rain water, constructing of wells or canals for more plentiful irrigation, better rotation of crops, greater use of machines for building, cutting, and threshing the corn, erection of fences to guard the crops against the ravages of wild beasts and others. These changes require the use of more labour and capital in their introduction. The expenses of making the improvements will lead to an increased cost of each dose of labour and capital that has been applied so far. If half a dozen of doses each costing Rs. 10 were applied to a plot of land and the expenses of making the improvement by way of sinking a well and irrigating the field came to Rs.15 per season, this additional cost of Rs.15 would be distributed over half a dozen doses each of which will now cost Rs. 12-8.

Though the improvement increases the cost of a dose it should also lead to a greater increase in the returns from each dose. If the returns are not increased at least in proportion, the improvement will not be worth the name. Usually the increase in the returns will be more than in proportion to the increase in the cost of the dose.

If the demand for agricultural produce is absolutely inelastic i.e., there is no possibility of an

increased consumption or a reduced consumption, (we are not concerned with this aspect here), the land will be cultivated upto that point alone where its new yield is equal to its yield before the introduction of improvements took place. As the yield per dose is higher after the improvements have been made, a fewer doses will suffice where more were applied before. It means that the margin of cultivation will contract and the result will be *lower rents*. If we imagine the case of a community living in isolation and in a state of self-sufficiency, the argument will fully apply to their cultivation if only we suppose that they cannot in any other way make use of a greater quantity of the agricultural produce.

But in actual life the demand for agricultural produce is elastic. When improvements made in agriculture result in greater produce and prices are reduced due to increased supply, people begin to consume more. Even if the local consumption remains inelastic, the excess of produce can be sold away in other regions. The improved means of transport will help the agriculturists in finding ready purchasers elsewhere. This being the case, the margin of cultivation will not be limited by the

consideration of producing a fixed amount of grain needed for local consumption. The same number of doses of labour and capital may be employed or even a greater number, if the possibilities of supplying the produce to wider markets are realized. Thus high elasticity in the demand for the produce and the possibility of serving wider markets may result in the margin of cultivation being extended and consequently in the *rise of rents*.

This rise in rent will be greater in the low grade land than in superior ones. Superior lands are generally already worked with efficient methods, and if improvements can possibly be made in them, they will affect their produce but little. The low quality lands are worked with poor capital and comparatively inefficient methods, and there is a greater scope for the introduction of improvements in them. These improvements will bring forth heavier returns. As the addition of produce due to the improved methods will be more in the case of low grade land than in the case of already well-cultivated superior quality lands, the increase in the rents will be more on low grade lands than on the superior ones.

## EXERCISES

1. Clearly explain the theory of rent and show that rent does not form part of the cost of agricultural produce.
2. Rent is high because prices are high, but the prices are not high because the rent is high. Justify the statement.
3. Will there be any fall in the price of agricultural produce if the cultivators had no rents to pay to the landlord?
4. Trace the effect of price fluctuations on rent.
5. How will rents of agricultural land be affected if
  - (a) railways and roads are built extensively?
  - (b) export of grain to foreign countries is totally forbidden?
  - (c) grain is imported from foreign countries?
  - (d) population increases?
  - (e) some natural calamity or war takes place?
6. Can you point out why house rents differ in different quarters of a town? Is there any difference in the nature of rent of a house and that of agricultural land? If they fluctuate, are the same set of causes responsible in each case?

7. Distinguish between 'situation' rent and 'fertility' rent. Is there any difference between these and true rent?

8. If the cultivators can manage to secure plenty of capital to use it in cultivating their lands more efficiently, why should they be asked to pay higher rents?

9. How will the improvements in agricultural methods influence the rent of agricultural land?

10. Why is it that land in old countries bears higher rent than land of same fertility in newer countries? Why is the contract rent nearly equal to economic surplus in older countries but much lower in new countries?

## Chapter IV

### WAGES

**Importance of the question of wages.** Great importance is attached to the question of wages in modern times. Ever since the advent of the factory system attempts have been made to solve it but without much success. The employment of a large number of labourers has become a necessity due to large scale production. If all these labourers had belonged to the same grade of productive efficiency the determination of wages would have been much simpler. But the situation is not so easy. Along with large scale production there has taken place specialization in production and the result is that even where a single article is being produced, its production has been spilt up into numerous processes for which services of labourers of different nature and degrees of efficiency are required. All these labourers contribute to the productive activity in their own way and consequently the remuneration they deserve or receive is bound to be different. The difficulty does not end here. Even when the remuneration has once been



fixed for the different classes of labourers, it is not supposed to have been fixed once for all. Those days are gone when the wages of labourers like other payments for various items, used to become customary in course of time and were regarded as sacred which neither the employer nor the employees dared change. Ours is the age of competition which is to be seen among the labourers when they seek employment and also among the employers when they seek the labourers. Once the labourers have taken up employment, they do not regard it as a permanent job but move to another that promises them better pay and brighter prospects. The employers also do not guarantee permanent employment to labourers, because they may feel compelled by the trend of the business at any time to discharge the workers or lower their wages.

The instability of wages is increased by such attempt on the part of the employers to cut down wages and also by the agitation on the part of the workers for higher wages.

The importance of wages among the different shares of a firm's income is great, so much so that by far the biggest portion of it is taken up by the

wages-bill. The employers are naturally tempted to reduce this heavy burden first whenever they feel the need of economy in the cost of production, because even a slight fall in the rates of wages leads to great savings in the total wages-bill. But the labourers, on the other hand, are always on their guard and resist with all their power any attempts made by the employers to cut down their wages. Labour is now-a-days not so ignorant or unorganized as of yore. The recent growth of the trade union movement has developed in them watchfulness of their interests and generated in them the habit of solid action. It has bound them in one huge unit with astonishing strength of bargaining and fighting for their cause. Yet as a result of the tussle between the employers and workers, one party or the other does succeed in altering the wages from time to time.

Wages are of a more changeful nature, therefore, than rent or interest. Land is hired for a period of time, a number of years, during which period a fixed payment is made for its use. The terms of the lease have to be observed faithfully or undesirable legal consequences may be faced. Interest rate is also fixed for certain period and does

not change. The sanctity of contract is maintained in this case too for a comparatively long period. Some wages are fixed on monthly basis; some on fortnightly; while others on weekly basis. The contract may be terminated with a notice of a month or a fortnight or a week. Certainly, no stability can be expected under these circumstances.

**Who are labourers?** The scope of the wage problem has grown bigger as a greater range of workers in now-a-days included in the class of labourers. Among labourers are counted not only the wage-earners narrowly so-called, but also those who contribute their personal effort either as independent producers or members of a group whether working for themselves or for others.

At the top stands the business organizer who is an independent owner-producer either on a small or a big scale. Apart from the remuneration that should go to him for his enterprize, he is entitled to some remuneration for his labour or work of organization. If he had employed some one to organize his business in his place, he would have paid him a fat salary. Why should he be punished if he is capable enough to look after his own business

personally. To the extent he organizes his business he contributes his labour and he is a labourer. The remuneration that he should receive for these services will be counted as wages. On the same level with him is the organizer or the manager in a joint-stock company though he is not working entirely for himself. He may be one of a set of directors, or the managing director or the managing agent who controls the entire scheme of production.

Below the grade of organizers are the salaried employers as superintendents, inspectors, foremen and bosses who enjoy a secondary right of management delegated to them by the organizers. Their business is to look after the labourer's work and help them if anything goes wrong with their work or the machines. They are experts in their line, and would have proved efficient producers had they possessed the necessary capital and enterprize to run their own business. In this class are also included the accountants and highly paid clerks as they too have to undergo a long and expensive training, like these experts, to qualify for their posts.

Next come the workers in the sense that they

have no hand in the management of the business and are simply wage-earners. They are divided in two classes of *skilled* workers and *unskilled* workers. The skilled workers have received the requisite general education and technical training, gained experience and have become efficient producers. The unskilled workers are those who have not prepared themselves for any particular line of production but possess just the necessary physical fitness and common intelligence to be employed in irregular and low type of work. The difference between the skilled and the unskilled labour is that of degree. Though there is a norm or standard of efficiency in a particular form of production which a skilled labourer possesses and which an unskilled one lacks, the skilled man himself may be counted as comparatively unskilled beside a better trained man or in another form of productive activity for which he has not been originally trained. A coolie is said to be unskilled though the fact is not quite so. Even his work requires some training in the knack of picking up, carrying, and putting down the luggage. Any man can do such a job without any training but not without being slow and clumsy. Among coolies

are to be found some who are skilled while others are novices or unskilled.

**Why wages are paid?** To the question 'why are wages paid?' a simple answer can be returned, that labour being a factor of production, it must receive a portion of the national dividend as its remuneration if it is intended that plenty of the efficient labourers should always be available for employment in industrial production. In spite of astonishing scientific advancement that has led to the invention of mechanical devices of high efficiency, the human mind continues to be the guiding spirit of the entire productive scheme. Howsoever heavy, bulky, delicate and costly a machine, it requires the controlling hand of a human being. Due to joint stock production plenty of capital has come to be employed and labourer has partly been replaced by machinery, yet the need for greater efficiency of mental effort and greater skill of manual effort is felt all the more. It is because of this indispensable service rendered to the cause of production that wages are paid to labour.

**Determination of wages.** For the determination of wages of labour, it is convenient to treat labour as a commodity and the wages paid

to labour as its price. It is not implied in this supposition that labour is as inert or lifeless as wheat or carrots or tin-plates or that labour can be sold to be utilized at any time and place howsoever unfavourable without protesting against it. What is meant is that though the human element cannot be disregarded and time, place and circumstances have to be considered while determining the wages for labour, it remains true that a labourer sells his labour to be used by the employer for a consideration as a seller of a commodity does with his article and the employer of a labourer considers the utility or sources of labour that the labourer can contribute to production and on that consideration bases what wages he will pay him. Just as there is the buyer's maximum price determined by the utility of the commodity to him in the course of consumption, similarly there is the employer's maximum payment that will be determined on the basis of the wealth which the labour can create. Also just as there is the seller's minimum, determined by the cost of production, below which a seller of an article will not part with it, similarly there is the labourer's minimum determined by his cost of maintaining his

health and efficiency and bringing up his family for less than which he will not accept to work.

**The upper limit of wages.** When an employer engages a labourer, the labourer comes to the workshop with his skill alone. Every other factor of production with which labour has to be combined is supplied by the employer. He supplies him space where to work, with raw materials on which to work and tools and instrument with which to work. He himself supervises his work and looks to other duties like buying and selling of goods. Since in a factory a labourer works in co-operation with other factors of production supplied by the employer, therefore whatever he produces in a period of time, will be the result of the combined effort of several factors. This produce has to be sold away in the market and therefore in determining the wages, the question of importance is not the quantity of the articles produced but their market value in terms of money. If the articles had to be consumed by the labourers themselves, as it may happen in co-operative production, the greater the quantity of the produce, the greater will be the share going to the labourers as their wages. But in ordinary factories, that is not the



case. Labourers do not receive a part of what goods they produce but money as a remuneration to their services.

Suppose an employer was already employing 39 labourers and adds one more to this number. This new labourer, 40th in the list, is supplied with all other factors needed and produces goods whose *market value* is Rs. 55. In order to find out what portion of this wealth is the result of the man's labour, from Rs. 55 should be deducted the cost of raw material, rent of the space occupied by him, interest and depreciation on the capital goods he has been using, and proportionate charges for organizers' work of superintendence, and taxes, insurance and other incidental expenditure which the factory goods have to bear before they can be sold in the market. If the total expenses on all these items comes to Rs. 20, Rs. 55—Rs. 20, i.e., Rs. 35 is the net value of wealth created by the labour of this 40th worker. *This amount fixes the maximum of wages that the employer can pay to this labourer.* It is the employer's maximum. The labourer cannot claim any more, as his personal service is worth this amount. If any more is paid under any circumstances, the excess will be paid

out of the remuneration of other factors which will consequently be under-paid and adjustment in the industry will be disturbed due to their diminished supply.

**The lower limit of wages.** Next item is to know the *minimum* that a labourer will reasonably expect as wages. The wages received by a labourer should at least be enough to meet his expenditure over his health and efficiency and over the maintenance and education of his children. In other words, *the cost of living of the family* fixes the minimum of wages which a labourer will accept (suppose in this case it is Rs. 30). Why cost of living of the *family*? It may sound excessive, but it is not so. If the earning member of the family is not getting enough on which to properly bring up the children to at least the same level of efficiency as he is occupying, the supply of future labour cannot be guaranteed. On wages lower than the cost of living of the family, either the labourer will consume less and reduce his efficiency by impairing his health and vigour, or his children will not get nourishing food and proper education and future labour supply will be inadequate and inefficient. In either case the industry will suffer

either today or tomorrow. It will be in the interest of the industry to pay as much wages to a labourer as may keep him fit and help to ensure continuous flow of labour in future.

If the employer has already 39 men in his employment and thinks it worthwhile employing this man who is 40th., this labourer may be called the marginal labourer. The contract for his wages will be made before he produces any wealth at all and this is the work of the employer to calculate beforehand what the net productivity of this labourer will be. The sum of Rs. 35, which we have noted before, is the result of actual working conditions (a case supposed to facilitate argument) and calculations based on them. Let us suppose that the organizer has the requisite experience of the business and can fairly well estimate what the net productivity of this worker's labour will be. Suppose Rs. 35 is his estimate too.—This amount, therefore, should be called not the actual net productivity but prospective net productivity; and because the 40th worker is the marginal worker this may be called the prospective *net marginal productivity* of labour employed in that factory.

If there is no other worker seeking employment in the factory where our man is going to be employed, his position will be very strong and he may insist on getting the maximum of his prospective net productivity as his wages. The employer will not mind paying that much as it involves him in no loss. If more workers are available, due to competition among them the wages will be brought down from Rs. 35 to, say, Rs. 31. None will accept below Rs. 30 i.e., below the cost of living. But if there are other factory-owners who are anxious to get labourers, the actual wage rate may be fixed at Rs. 32. Thus it depends upon the demand for a particular kind of labour and its supply to determine the actual wages paid to labour. But this amount will be within the employer's maximum and the labourer's minimum. Just as the price paid for the marginal unit of a commodity determines the price paid for the entire stock of the purchase, similarly the wages which 40th man is willing to accept, i.e., Rs. 32 will fix the rate at which all of the remaining 39 labourers also will be paid.

In actual practice an employer does not employ labourers one by one by calculating each individual's prospective net productivity,

but decides on a scale of production and the number of labourers required for that scale on the highest wages he can afford to pay them. This, of course, is calculated on the basis of the prospective net marginal productivity of the entire number he is going to employ. As any one of the entire group may be the marginal labourer, wages paid to each of them are equal and are determined by the marginal productivity as their maximum. Higgling takes place between the employer and the labourers who have their minimum and a rate of wages is arrived at for that group of labourers.

**Changes in wages.** Changes in the wages of workers in any industry may take place as a result of several causes. To start with, any factor that increases the efficiency of labourers like an improvement in their home conditions, wider education, better training and finer character, will help them to qualify for higher wages. On the other hand, if there is a deterioration in their efficiency due to unsettled home life, narrow and defective education, inadequate technical training with little scope for practical experience, undesirable habits and bad company destroying their sense of honesty, responsibility and straight dealings,

their wages will be lowered.

Again, if the employer is supplying them the improved machinery and introduces better organization with perfect division of labour, specialized machinery and highly developed technique of production, their marginal productivity will be greater and so also the wages. Any lowering of the efficiency of labour through improper equipment will bring down wages. Another factor affecting the wages of labourers is a change in the market price of the commodity produced by them. Wages are paid in terms of money and the maximum amount which the employer calculates to be paid as wages, is based on the price the produce is going to fetch in the market. If as a result of any change in the demand or supply of the commodity, its price rises, the money value of the productivity of labourers increases and in all fairness their wages should rise. Or, due to a rise in the price of the commodity the producer will be making heavier profits and would increase the scale of production. This will lead to a greater demand for labour and therefore to increased wages. If the price of the commodity falls, the money value of the goods produced by the labourer falls, and so

the maximum which the employer fixes as the upper limit. His business will be less profitable; he will lower the scale of production which will mean diminished demand for labour and lower wages. The profit or loss to the employer will not instantaneously be reflected in the enhanced or diminished scale of production, but if the new price level has a tendency to become more or less permanent, scale will be affected leading to either greater employment of labourers and higher wages or reduction in wages and unemployment to labourers.

Wages may also be increased or lowered by a change in the labourers' bargaining power. Labourers are, as a rule, for bargainers. Let us suppose that when our employer engaged 40 men, they were disorganized and in spite of their prospective net marginal productivity being worth Rs. 35, they accepted to work at Rs. 32 each. Later on, as a result of association, they may form a union or association to look after their collective interest; and reopen the question of wages and demand increased rates. Specially when the price of the articles they produce increases they will demand higher pay in a body. The employer will be forced

to listen to them and will more likely increase their wages though the increase may not be to the extent of rise in the price of the commodity. The labourers are also likely to combine themselves, when due to falling prices the employer intends to reduce their wages. They will collectively oppose this move and may successfully maintain the rate if they are combined as one man and labourers outside also help them, though ultimately there is bound to be a reduction in their wages. When the prosperity of an industry is reduced due to falling prices, the employers cannot afford to continue paying higher wages. They will sooner stop work than maintain high expenses.

#### **Disadvantages of labourers in bargaining.**

Wages which are the price of labour are determined like the price of a comparatively perishable commodity in the short period. Like a perishable article the quantity of labour or workers seeking employment is fixed for the time being. Skilled workers, who have been specially trained for a particular job, cannot start forgetting all they had learnt and start a new course if they are not getting the employment they are seeking. Similarly if there is a shortage of supply, it cannot be raised as it takes about



a generation to train up young men in a particular line. Thus supply being fixed, the price of labour or wages will be determined by demand for them. Again, labour is perishable in the sense that if labourers do not succeed in getting employment, they are liable to lose their skill for want of practice and thus reduce their bargaining power in future. Consequently they are at a disadvantage in bargaining with the employers who have the upper hand in bargaining in this matter.

Labourers cannot afford to wait in case the present terms offered to them are unsatisfactory. One reason is the perishable nature of labour and the other is the poverty of working classes. They have no savings on which to fall back specially when they are entering a career, and they will probably accept lower wages rather than starve and lose their skill. The employers are moneyed people and they can afford to wait; hence they have advantage over labourers.

Labourers are disunited. The trade union movement is in its infancy, and the small number of labourers with whom the movement has found favour are highly skilled ones. The semi-skilled and unskilled labour needs the help of a combina-

tion more but lacks the union spirit most. It is these labourers more than highly skilled ones that lose most in bargaining. The employers know that, and take the best advantage of the circumstances.

Then the employer's wider knowledge of the industry, of market conditions, and skill in bargaining helps him to out-bargain the labourers as a rule.

Changes in the demand for and supply of labour are also factors of great significance in changing the wages of labour. Supply remaining constant, if the demand for labour gets higher, wages will rise, if the demand diminishes wages will fall. Similarly, demand being unaffected, if the supply of labour increases, wages will fall, if the supply is diminished wages will rise.

The demand for labour neither increases nor diminishes independently but only through a rise or fall in the demand for the commodity the labourers are producing. If the brass wares of Moradabad become more popular, the increase in their demand, supply being fixed, will lead to higher prices which will bring greater profits to the producers. Greater profits will lead to an increase in the scale of production which will in its turn require employment of a

larger number of brass-workers. Similarly, a fall in the demand of utensils will result in lower profits, diminution in the scale of production and reduced employment of the labourers. When there is greater demand for labourers, the employers compete among themselves for the services of the labourers and begin by offering higher wages. When there is less demand for labourers there is little desire on the part of the employers to engage labourers and they offer lower wages.

The supply of labour comes from the general population and specially the growth of numbers among the class of labourers whose supply is being considered. A specially higher growth in the number of children born in brass workers' families will increase supply of that kind of labour more than a rise in the growth of general population. But this is true that if population in general is increasing, a particular class of workers may also be supposed to be growing in number equally fast. Apart from other considerations, naturally people multiply in numbers rather rapidly. *Malthus* writing in his 'principles of population' goes so far as to assert that the natural growth of population is faster than the growth in the means of their

subsistence provided by Nature.\* The result is that after a certain period of time there are more persons than can be properly fed, clothed and housed. They have to lead a poor life that saps their vitality and makes them an easy prey to death through disease and epidemics. Or, because there is a shortage of means of subsistence on the earth, there is a race for their appropriation and control which leads to war. In any case, either through wars or through low living, there is a great loss of human life with its attendant misery. *Malthus* gives these sources that increase the number of deaths the name of *positive checks* and affirms that these checks will invariably operate unless people learn to apply what he calls the *preventive checks* by way of self-control and moral responsibility towards the children. He means to say that it is better in the interest of humanity that people should restrict the number of children born in their families by exercising moral control over their domestic desires as otherwise the fast growing population will perish miserably on account of diseases and epidemics and wars, which lead to unnecessarily heavy sufferings.

If people increase fast, it means that the

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\* Malthusian theory of population.

supply of labour is also increasing fast. The demand for their labour being what it was before, the wages will be lowered due to greater competition among the labourers for a limited number of vacancies; on the contrary, if the growth of numbers is rather slow and the supply of labourers is low, on account of competition among the employers to engage these labourers wages will be higher.

**Why wages differ from industry to industry?** Different industries employ different equipment, and taking the skill of labour required in all the industries to be the same and also supposing that there is complete equilibrium between demand and supply of labour in each, an industry which has a better equipment will help workers to produce more and pay them higher wages. A motor car industry will naturally pay higher wages than a cotton mill. Even in a particular industry, different productive units may be employing equipment of different degrees of efficiency. One cotton mill may be using the most up-to-date machines and enjoying the benefit of highly skilled management, while another may be content with old machines and almost primitive organization. The marginal

productivity of labour will be higher in the first mill than in the second and the wages of labourers in the former mill higher than in the latter.

Again, the efficiency of workers required in one industry may be of a very high grade. It may be requiring good education and long training followed by practical experience and may be involving heavy cost in acquiring it. If the skill costs so much of money and effort it must fetch a higher wage. It will be very efficient, hence highly productive and consequently highly paid. Thus cost and long training are also responsible for its limited supply as poorer parents cannot afford to spend so much and wait so long in training their children. Thus these highly trained workers, like engineers, receive and continue receiving high salaries. Other industries not requiring such a highly developed skill will not pay as high wages. On the other hand its supply can be increased sooner than in the above case, as neither the period of training is so long nor is the cost so heavy.

One more factor which helps to maintain this inequality in wages by not adjusting supply of labour to demand is the want of mobility of labour from less highly paid industries to more highly

paid ones. There are several aspects of mobility which we deal in the next chapter.

### EXERCISES

1. Define wages. What determines the general rate of wages in a given trade? Point out the effect on wages of (a) custom, (b) collective bargaining.

2. Account for the existing inequality in wages of different occupations. Why should there be difference in the wages of a sweeper and a washerman? Why are a sweeper's charges ridiculously lower in India than in America?

3. 'The marginal productivity of labour in any trade tends to determine wages in that trade.' Comment, illustrating your answer by examples taken from India.

4. How high or how low can wages be? Why do the wages of labourers in the villages differ from those in the towns? Why is there an inequality between the wages of men and women?

5. Are wages determined in a similar manner as the price of commodities?

'Labour is a perishable commodity.' How does this affect wages?

6. What modifies the character of labour as a

commodity? Is it not a fact that just as the price of a commodity is determined by the interaction of the forces of demand and supply, so is the rate of wages in any occupation fixed by the demand for and supply of labour?

7. What do you know of the Malthusian theory of population? Is the rate of wages a matter of very slight concern to the working class of India?

8. Do you agree with the following? Give reasons for your answer.

(a) 'High prices do not always involve high wages.'

(b) A man is sometimes paid to play.

9. Under what conditions.

(a) does a man pay himself?

(b) does a man agree to work in factory without getting any wages?



## Chapter V

### MOBILITY OF LABOUR

By their nature, businesses are liable to changing fortunes: they suffer from depression which is in turn followed by prosperity. With the changing fortunes of the businesses are bound up the fortunes of producers engaged in these businesses. When the producers find their businesses slackening and expect the depression to continue for long, they desire a change in the hope of improving their economic conditions. This change may be in the place or locality of their productive activity or in their occupation itself or in both. This movement of producers or labourers from place to place or occupation to occupation is called their mobility.

An instance of *local or geographical mobility* is to be found when a village weaver, finding it difficult to make both ends meet in his native village, repairs to a neighbouring town in the expectation of better business. The other type of mobility is the *occupational mobility* when an individual leaves his less remunerative occupation and adopts a new and more remunerative one. This

new occupation may be of the same grade as the original one and in that case it will be an instance of *horizontal mobility*, as when a carpenter becomes a blacksmith. The newly adopted occupation may be of a higher or a lower grade as when a carpenter becomes a teacher or is forced to earn the living of a coolie. In either of these cases we find instances of *vertical mobility*. It is possible to find an instance of both types of mobility in a single case when a person changes both the locality and the occupation just as a carpenter at Bareilly may give up his business there and may work as a coolie at Lucknow:

Geographical mobility is profusely illustrated. Easy and cheap means of transport and quick communications have led millions of persons not only to move to neighbouring places, but also to colonize distant lands. Ever since the beginning of modern period in history, new lands have been discovered and colonized. North and South Americas, Australia, Newzealand, Southern and Eastern Africa and numerous islands scattered over the entire surface of the seas have become populated with white races of European stock and their number there is fast increasing. These colonies

furnish instances of *permanent* mobility of labour. In addition to that, a temporary flow of businessmen, labourers, administrators, explorers and experts in various walks of life continues. These people go to new and undeveloped countries to carve out a lucrative career or enjoy one offered by the government of the country and after sometime come back to enjoy a well earned rest and live on the fortunes made there.

Even in every district of India the two types of *permanent and seasonal mobility* are to be met with. Some cultivators give up their occupation on the land either because they have pawned away the entire land without any hope of redemption, or because there are too many persons at home to depend upon a small holding, and take up new jobs in the distant towns where they reside permanently. There is yet a considerable number of people who visit the neighbouring towns in between the seasons when there is practically no work in the villages and try to add a little bit to the family income. This intermittent supply of workers is responsible for very cheap though unskilled labour available at times in the towns. Indians have also emigrated to foreign lands as indentured labour for

a period of time though some of them made their homes there and settled permanently. Some merchants, lawyers, shopkeepers and people belonging to other professions also followed the former stream to serve them in their country of adoption. In most cases the emigration which was contemplated as a temporary measure became permanent when the new conditions suited them and their occupation.

The census figures relating to different countries can throw ample light on the geographical mobility but very poor material is available with which to gauge with any degree of approximation the other phase called the occupational mobility. The first great difficulty is about the classification of occupations into several grades. Some will consider the money income as the basis of such a classification while others may attach greater importance to social and moral considerations. These considerations will vary from country to country. In India occupational mobility must have been very rare in the olden days of caste supremacy when one's occupation was unalterably fixed by his birth. But in modern times the contact with western civilization has weakened the bonds of castes and developed individualism and therefore to that

extent encouraged occupational mobility. Though in the absence of organized investigation it is difficult to say to what degree mobility from occupation is taking place today, yet it is obvious to all that such a mobility does take place more frequently and more appreciably.

Just as it is of importance to note in case of local mobility whether the movement is permanent or seasonal and inter-regional or inter-national, similarly in case of occupational mobility it is interesting to learn as to how many grades up or down the mobility has taken place. As is known from common experience in life in India, majority of people in the villages pursue the same occupation as was followed by their forefathers though a greater movement is seen among urban population. Again, it is easier to fall down than to go up an occupational ladder and it can be safely assumed that of those that move from grade to grade, a greater percentage is composed of those that move downward than those that move upward. As far as the degree of movement downward is concerned, there is no limit upto which one can fall but the uphill task is more arduous and seldom performed. It will be easier to find a graduate clerk becoming a

street hawker, when thrown out of employment, than a governor of a province. Even in England where a young man's career is not checked due to considerations other than those of fitness and efficiency, more people move downward and to a greater degree than those that move upward and to a comparatively smaller degree.

**Mobility and equality of wages.** If efficiency of workers is the same, higher wages in one locality than in the other are due to want of perfect equilibrium between demand and supply of labour in the two places. If cotton workers of Bombay are paid higher wages than cotton workers at Cawnpore, it can be concluded that there is a comparative over-supply of labourers at Cawnpore and under-supply at Bombay. If some labourers of Cawnpore move to Bombay, they will leave a diminished supply behind, thus helping to raise wages there and increase the supply at Bombay and bringing the wages down. If there is perfect mobility between these two towns the rate of wages should be equal there.

The same thing holds good in the case of different industries paying different wages. If the building trade is noted for higher wages than that

of carpenters, it is because there are less builders than the number required and there are more carpenters than are necessary. If carpenters could take up building and give up carpentry, the supply of labour being increased among builders and diminished among carpenters a greater equality in the wages will be established.

**Why inequality still persists?** If mobility of labour can bring about equality in wages and still wages are not equal, it must be due to imperfect mobility of labour. There are several factors which hinder mobility of labour.

First of all, there is the want of knowledge among labourers. Before moving, a labourer must know definitely whether there is a real demand for his labour at a new place, and this he is unlikely to know about distant places. It is very difficult for ignorant and unskilled labourers to know the conditions of their industry even in their neighbouring district. If they be organized, and labour exchanges scattered over the entire region, broad-cast information on the nature of work and wages, shortage and excess of supply of labour at different places can be obtained, and the labourers may find it easier to move. In the absence of such agencies

they will remain in comparative ignorance and will not freely move. Newspapers and advertisements alone throw though inadequate light on these matters.

In the second place, it is quite possible a worker may lose some of his efficiency by moving to a new place or a new occupation. He is bound to lose his skill when he changes his occupation. At least during the period of learning the new trade he will be a poor producer. Even in the case of mere geographical mobility, there is such a danger. The prosperity of a person's occupation depends in addition to the man's skill, on his knowledge of his surroundings, and of the taste and fashion of the people he is serving. In a new place and a new occupation he will be a complete stranger both to customers and trade conditions. An artisan having moved to a new town will take some time before he can understand the nature, the means and the taste of his new customers. In the case of a farmer, the change is very great. He will probably lose his intimate knowledge of the local soil and weather conditions and find himself a novice in new surroundings. A farmer will suffer a greater loss in his skill than an artisan as a result of geographical mobility.



The third factor is the love of the place where a worker has been living for generations. The love for his native place, friends and relatives may prove too strong to be shaken off and he may not move in spite of there being sound economic reasons justifying such a movement.

Then, in people there is a natural aversion to be always on the move in search of better jobs and better places. Every one likes a settled life and a permanent job that brings reasonably decent income and contentment in life. Unless a person is grossly dissatisfied with his income and the conditions of work, he will not like to move to new places and new occupations. There is the risk of remaining out of employment for the time being, and inviting sufferings if the family depending on his income is pretty large. In most of us the spirit of adventure, which is a common feature of youth, dies down as years advance and gives place to *inertia* which would not let us leave our groove and start life afresh anywhere else.

Finally, there is the cost of moving both in local and occupational mobility. Knowing that Cawnpore offers better prospects for business, one may not move because he has not funds enough

to pay for railway fare, or to hire a house or a shop and set up a new establishment. And then he may have to maintain himself on his past earnings if his business is slack in its earlier stages. In occupational mobility this factor is of greater importance. Highly paid occupations like law, medicines, civil, police or military careers, require long education and costly training which the poorer families cannot afford for their children in spite of the assurance that high emoluments there will compensate for high expenses. It will be only the sons of the present occupants of these high grades and of other rich people, who will receive proper training and take up these occupations. The supply of candidates for such occupations cannot easily be increased and they will continue offering higher incomes and better prospects to those who can afford the initial expenses. Thus glaring inequality in wages or salaries in different occupations perpetuates itself through heavy cost of training which is beyond the means of the poorer children.

## EXERCISES

## 1. Explain why

- (a) "A considerable proportion of labourers of villages in Northern India prefer 4 annas a

day in their own village to 7 or 8 annas a day in a big city."

- (b) A brahmin may starve as a cloth merchant, but would not become a shoe merchant, even though the latter promises him much brighter prospects.
- (c) A graduate son of a cultivator considers his father's occupation too low to be adopted for a man of his qualifications, but does not mind hankering after a job of Rs. 40 per month.
- (d) Kayastha and Bengali of Northern India are more mobile than other castes and classes.

2. What is meant by *mobility of labour*? Distinguish between horizontal and vertical mobility. Are there any other types of mobility? How far are they obtainable in this country?

3. Can you explain why there is a difference in the earnings of (a) a grass-cutter (b) a blacksmith (c) a *kabar* (d) a cook (e) a clerk (f) a lecturer (g) a judge?

4. How has the stay-at-home tendency of the people in India been affected by railways and increased knowledge? Was there no market for labour before the advent of railways? Do you agree with the following?

"It is probable that the ancestors of the men of low castes, who now form the bulk of the village labourers, were at one time in the position of slaves of the cultivators; that is to say, they were not free to leave the village or to offer work to the employer who would pay the highest wages, but they were bound to their master's work, and the share of the produce which they received was determined by their master's will."

5. Enumerate the factors which increase the mobility of labour. What has mobility of labour to do with the rate of wages? Illustrate your answer by Indian examples.

## Chapter VI

### STANDARD OF LIVING AND WAGES

Formerly the supporters of the Iron Law of wages used to argue that if the wages of labourers were increased, they would be either wasted away in useless luxuries or would induce the labourers to multiply their numbers so that the standard of living would remain at the same level as before, and therefore there was no use and justification in the labourer's demand for higher wages. But in any industrial country, where wages have risen enormously compared to those of the middle of the last century, indications are to show that higher wages have invariably resulted in higher standard of living, rather than in bigger families of working men. It may be pointed out that now that the wages are higher, people postpone marriage longer and have fewer children than they used to have because they are jealous of guarding their standard of living.

It is so much a question of the power of realizing one's future and the sense of responsibility towards one's children. If parents feel their obliga-

tion to bring up their children at least to the level of efficiency they themselves have attained, if no better be possible, they will conscientiously limit the number of their children so that they may be better able to provide for their education and training. Growth of knowledge and education have helped even labourers to realize this sense of responsibility and they have been spending more on the raising of standard than wasting away the increased wages.

A rise in the standard of living means an increase in the number of things, man feels, are necessary for life before he can marry and have children, i.e. a rise in the standard of living means a weakening of domestic instinct. Obviously a rise in the standard of living will result in smaller families and improvement in the tone of life and an increase in the efficiency of labourers. These betterments in their turn will increase their economic productivity and fully compensate the employer for higher wages paid to labourers. A fall in the standard of living means strengthening of the domestic instinct resulting in bigger families leading a poorer life. This will adversely affect the health and efficiency of workers and their children and react on their economic productivity and through

it the wages.

Thus a low standard means lower wages which leads to still lower standard and again to miserable wages and the vicious circle continues. A high standard means higher wages which lead to still higher standard and again to more handsome wages. From the side of the wages, lower wages mean lower standard and poorer efficiency leading to still lower wages which in turn further reduce the standard. Higher wages will mean a rise in standard leading to greater efficiency and better wages reflected in still higher standard. To conclude, higher wages benefit both the workers and the employers while the lower wages harm both of them.

**Real and Nominal wages.** Nominal wages of a labourer are the money payment that he receives as a remuneration for his work. An increase in the nominal wages is good so far as it goes, but it is not always right to suppose that the economic well-being of a class of labourers will necessarily improve if the money wages have gone up. The amount of money that a labourer receives does not satisfy his wants directly. It has to be spent on the commodities that are to be actually consumed by

him. It is the amount of the necessities, comforts and luxuries, that the money wages can buy, on which depends his well-being. These articles of consumption that can be bought with the help of the money wages form an important part of what are called the *real* wages.

A rise in the nominal wages may not reflect as much improvement in the prosperity of the workers if the prices of the commodities that enter their consumption have also gone up. A rise in the prices of articles will mean less quantity of these articles, and a fall of price will mean a greater amount of them if the money wages remain the same. A fall in the price, therefore, increases the real wages. It should be remembered that only a change in the prices of the commodities that are consumed by a particular class of labourers will increase or diminish the real wages of that class of labourers. Any fluctuations in the prices of motor cars, for example, will not matter for farm labourers or factory labourers in India, as motor cars are not used by them. A rise or fall in the prices of long cloth, cheap fruits, cereals and pulses, salt and cheap spices or tobacco will greatly affect them.

In addition to these articles that can be bought



with the money wages, the *real* wages include every other kind of payment, concession or incidental advantages that the labourers can enjoy on account of their position. A domestic servant receives occasional meals in the household. In winter he is given warm clothes or shoes. On the occasions of ceremonies he receives gratuities and presents. Free travel and sight seeing he enjoys in the company of his master. All these in addition to his money wages are to be counted among his real wages.

Mill workers are usually allowed to buy the mill produce at concession rates. Some of the more advanced firms distribute among their workers a part of the yearly profits as bonus. They also supply them free libraries and reading rooms, swimming tanks and playing fields, free medical treatment and primary education to their children. All these incidental advantages must be included in the real wages.

The stability of employment may decide the choice of the worker in favour of a less remunerative job in preference to one that carries higher wages but is a temporary appointment. And again, the worker has to consider the opportunity

of increment and advancement of the career that he may have in an employment. A low start with better promise for future prospects will be more attractive than a comparatively higher starting pay accompanied with poorer prospects.

And further, the treatment that a labourer will receive at the hands of the employer, the company of other workers with whom he has to pass his time at least in the factory, and the surroundings of the workshop that may affect his health favourably or otherwise: all these will have to be calculated in the real wages along with the actual money payments.

If a worker is to decide which particular job to undertake, it is the real wages including all the items enumerated above that will be the basis on which he would decide to take up one rather than the other, and not the money wages.

### EXERCISES

1. How are wages affected by the standard of living of the wage-earners? Can you get higher wages by raising your standard of living? Discuss the bearing of the standard of living on the number of agricultural labourers in the United Provinces.

2. "An inferior mode of living may be a cause as well as an effect of poverty." Discuss this.

3. Distinguish between *nominal* and *real* wages. Explain the meaning of *real* wages and exemplify your answer by reference to the wages of a mason, a domestic servant, and a police constable. How are real wages affected by social customs in India?

4. "When goods increase, they are increased that eat them."—Ecclesiastes, V. "When a young man in this country secures a good post, he finds that he is expected to feed and clothe a large number of poor relatives." Discuss the bearing of these statements on the population question in India.

5. Comment on the following statements:

(a) "In India the standard of living of the mass of the people is so low that they are not at all careful about the increase of their numbers."

(b) "Just as in the case of ordinary commodities the supply is limited by the cost of production, so in the case of labour, the standard of living limits the supply."

## Chapter VII

### INTEREST

**Why interest is paid?** The great service which capital renders to the cause of productive effort is to increase the efficiency of labour. An extended use of capital in the form of capital goods like tools and machinery has perfected the present system of division of labour and developed large scale production. As a consequence thereof the efficiency of human factor has grown enormously. It is for this service of capital that interest is paid.

A farmer possessing but poor requisites of farming can produce little in spite of his skill and experience in the art of cultivation. The soil may be too dry and rains inadequate; the pests and wild beasts may be damaging the crops but the farmer feeling helpless against them. He has got no money to sink a well in the field or to buy chemicals to kill the rats or pay for the fencing round the field. If a sum of Rs.100 is invested in a well on the plot of land, due to timely and plentiful waterings the crops will be richer. This increase in the crop will be attributed to the services of the capital spent in

sinking the well. Interest is paid for such services of capital. When capital has been borrowed, the amount of money which the borrower pays back to the lender over and above the amount actually borrowed is called interest, and the percentage it bears to the original sum is called the rate of interest. Usually it is calculated as so much per hundred per year.

**Demand for capital.** Like the farmer in the above illustration, producers usually have to borrow money from the lenders. They need capital for buying raw material or machinery, for paying wages to labourers, for transport and marketing expenses, or for expanding their business. In modern times, when businesses are large and markets wide, it is rare to find any producer on considerable scale in a position to supply all the capital from personal savings. Even governments of countries, states or provinces and local bodies have to borrow money in the open market for constructing railways and canals or water works and electric plants and other productive schemes. They also borrow money for unproductive purposes like wars and other emergencies. Individuals too sometimes borrow money for consumption rather than production purposes.

Whatever the purpose, and whoever the borrower, the demand for capital is made up of the total of all the demands big or small arising at a particular time. There should be no distinction made between demand for capital to be used in production and that for consumption purposes as both these demands affect the rate of interest in the same way.

**Supply of capital** is possible because people save. It is *prudent* to lay by a part of one's earnings from time to time. One does not know what is in store for him in the future. Illness and accidents happen and old age overtakes every body. As age advances one's earning capacity also diminishes. One will do well to make some provision for such occasions and also for those emergencies when expenses are specially heavy, as at times of marriage, death etc.

Then there is the responsibility to provide for the bringing up and training of children and giving them a start in life. It is one's duty to give at least as good a start in life to one's children as he got from his parents, and ensure their protection if any accident or death occurs to him and stops the source of income.

The third motive to save is to enjoy *economic advantages*. Capital, when lent, brings with it interest which represents increased purchasing power. Capital also helps people to avail themselves of any opportunity to take up a remunerative business promising good returns at some later date. Other advantages like improvement in ones social position and the attainment of power invariably go along with it.

**Why interest is charged?** But if people save, it does not mean that they are ever willing to let others use their savings for nothing. Why should a man pass on his savings to others rather than keep them himself or use them as capital or spend them whenever it is opportune or expedient?

When savings are lent for a period of time, say a year, the lender undertakes to postpone the enjoyment he could have derived if he had chosen to spend that sum of money today. What is there to guarantee him the same amount of satisfaction in future in place of the present one. Future is uncertain, and people who lend money they have accumulated for emergencies in their life or for the sake of their children, are naturally unwilling to part with it unless the borrowers undertake to com-

pensate them by offering interest. Thus *uncertainty* of life and that of the enjoyment of one's saving during his lifetime is the factor which makes the payment of interest necessary. Some people adopt an unreasonable attitude towards future enjoyments which they, therefore, discount. Even if they are sure that they will survive to enjoy their savings next year, they prefer the present satisfaction to the future one or consider the present satisfaction worth Rs.100 to be equal to satisfaction to be received from a sum more than Rs. 100 say Rs. 105 a year hence. Howsoever unreasonable this psychological disposition may be to consider the present needs more urgent, than the future ones seen as vague and uncertain, it is another factor which makes the payment of interest a necessity.

**Determination of Interest.** Interest being the payment made for the use of capital, it is determined, like the price of any other commodity, by its demand and supply.

The demand price of capital or the maximum amount of payment a borrower will make for the use of a certain quantity of capital, depends upon its *productiveness*. The productiveness of capital



can be calculated on the same lines as the net marginal productivity of labour has been done in order to find out the wages. Suppose a handloom worker with all his instruments worth Rs. 50 can weave 8 yards of long cloth in a day of 10 hours. If he gets a job in a cotton mill and is supplied with a power-driven iron loom, he can weave 18 yards in a working day. If the machine-loom costs Rs. 613 it may be calculated that with an extra capital of Rs. 650—Rs. 50 or Rs. 600 he can produce (18—8) or 10 yards of cloth more. If the market value of long cloth of that quality is As. 5 per yard, the gross productivity of Rs. 600 will be  $10 \times 5$  annas or annas 50. In order to find out the net productivity of their amount of capital in the form of a loom, we should deduct from 50 annas all their expenses incurred on that machine. Below is given account prepared on business lines.

	Rs.	a.	p.
1. Cost of the yarn @ 0-2-6 per yard of cloth	1	9	0
2. Rent of the space occupied by the loom per day	0	4	0
3. Cost of the power consumed by the loom per day	0	3	0

	Rs.	a.	p.
4. Depreciation of repairs	0	4	0
5. Oiling etc.	0	1	0
6. Charges of management	0	1	0
7. Wages of the labourer @			
0-0-10 per yard	0	8	4
8. Taxes and insurance	0	1	0
	<hr/>		
Total expenses	2	15	4

If Rs.2-15-4 are deducted from the market price of the cloth, the net productivity that can be attributed to the loom comes to 2 annas 8 pies per day of Rs.60 per year.

This net productivity of the loom is the maximum amount that can be paid as interest on the excess value of loom, or Rs.600.

**Supply price of capital.** The supply price of capital is determined by the remuneration required to induce the marginal or most unwilling saver to bring forth his supply of capital needed in the industry. There will be people who would willingly save and lend the savings at a lower rate of interest but higher payments will be necessary to induce the more unwilling savers to save as otherwise the supply will not suffice to meet the entire need for capital in an industry.

An equilibrium will be reached, at a certain rate at any time, between the total quantity of capital demanded and supplied and that will be the rate of interest for the time being. This rate will be equal to the net productivity of capital applied at the margin and also will be just sufficient to induce the marginal saver to contribute his share of the capital.

If the rate of interest increases, the demand for capital will be contracted as otherwise the producers will be paying more interest than the returns they are getting at the marginal application of capital. If the rate of interest is lowered, the margin will be extended as the so-far marginal application will leave a surplus to the producers who would find it in their interest to employ more of capital.

Likewise, a rise in the rate of interest will increase the supply of capital as the present savers will save more, finding it more profitable to save, while those who did not consider the old rate high enough, sub-marginal savers will start saving. A fall in the rate of interest will contract the supply of capital as the present savers will not find it as profitable to save while the marginal savers will

consider the new rate too low for them to save at all. They will prefer to consume their wealth rather than postpone consumption at such a meagre inducement.

There may be cases when a rise in the rate of interest may lead to diminished supply and a fall in the rate to an increased supply of capital. Those who desire to make a provision for a fixed annual income for future either for themselves or for their children will feel bound to save more if the rate of interest is low as at a low rate of interest more principal is required to bring in a certain annual income. On the other hand, a higher rate of interest will fetch the same annuity on a smaller investment and the savers may be led to save less. For example, if a person wants to leave at his death cash or insurance money enough to bring Rs.60 as monthly income to his family, he should collect or insure himself for Rs.14,400 if the rate of interest is 5 per cent; Rs.12,000 if the rate is 6 per cent; and Rs.18,000 if the rate is 4 per cent.

**Net and Gross interest.** *Net interest* or *pure interest* is simply the price paid for the use of the capital. This net interest will be the same throughout the market at a particular time and it

is this rate at which an equilibrium between demand and supply of capital is reached.

The payment which the borrower makes to the lender over and above the capital borrowed is generally a sum greater than what is called net interest. This total payment is called *gross interest* which is made up of the *net interest* and *remuneration for risk and management*.

In lending capital there are two kinds of risks involved—*personal risk and trade risk*. If the lender has any suspicion of a flaw in the character or the business morality of the borrower, his unwillingness to lend him will be greater than ordinarily it is in case of those who are noted for honesty and truthfulness in their transactions. The borrower may not intentionally pay, is the consideration which requires greater inducement or higher rate of interest at which the lender will think of lending out his capital.

Where there is no such danger of fraud or default as borrower is a person of good moral character and his dealings with him confirm the lender in his favourable opinion of him, there is the risk of the trade. There are certain trades which by their nature are open to greater risks. Mining

in a new area involves greater risk than, say, starting a cotton mill, and entering a new field of enterprise is still more risky. The borrower may not have any intention of default but his good intentions will not help the lender if the borrower loses his capital in the trade. Therefore industries involving greater trade risk will have to pay something more than what is needed for the mere service of capital or net interest.

The second item included in gross interest are the earnings of management. Lending involves risks as detailed above and the lender has to undertake a lot of trouble in keeping down those risks. There is the question of finding the right party to whom to lend, and then the necessary legal proceedings and finally the collection of the debt. All this has to be managed by the lender who makes the borrower pay for it in the shape of higher rate of interest.

**Variation in gross interest.** When the rate of interest varies from industry to industry and from individual to individual it is because different degrees of risk and trouble of management are involved which require different compensation. Net interest in all the cases at a particular time re-

mains the same, but gross interest can never be equal as long as there is inequality in risk and management involved in different cases.

**Mobility of capital.** *Capital is more mobile than labour.* While dealing with the mobility of labour it was noticed that in spite of there being good reasons why labourers should move from place to place or from industry to industry, mobility is retarded by certain factors of a personal nature. With capital such factors do not count. Capital being inert, it has no likes and dislikes and it will not resist transference under any circumstances. Capital does not suffer from inertia and has no excessive love of home-land. At the same time it does not stand to lose in efficiency if it remains un-invested for some time. Given assurance of equal security and certainty of gain, capital will flow much more readily than labour to a place or an industry promising a higher rate of returns.

All capital is not equally mobile. Liquid capital, or cash and securities which can immediately be sold away and their value realized, is more mobile than fixed or frozen capital. Every day stock market transactions furnish instances of mobility of liquid capital. Higher dividends in sugar

industry will lead to a flow of capital into sugar shares from those of cotton or glass if the latter are paying lower dividends. The investors holding cotton or glass shares will sell them away and with the money so realized will buy sugar shares. Geographical mobility of capital is brought about by purchasing the shares of industries of foreign lands.

Fixed capital is slow to move. As a matter of fact it is absolutely immobile in short period. Money invested in capital goods like buildings, machinery, canals and railways cannot move until their value has been recovered through depreciation funds. To realize their full value they have to be worked out their entire life as otherwise mobility will be incomplete because their immediate sale will mean a heavy loss to their owners. There is no other way of moving capital from such fixed investments, as machinery cannot usually be used for purposes other than those for which it was specially constructed.

Generally capital moves unaccompanied by the owner who stays at home and invests his capital at different places and in different industries. In modern times the entire world has become one



market for the investment of capital, on account of the existence of guide, means of communication and the means of remittances like banks. Now it is not necessary for a capitalist to be personally present at the place where his capital is invested and being used in production. He can invest his money through banks and brokers. Such cases when capital leaves its native land along with its owner who starts a fresh business at a new place seldom occur and they are not the typical instances of mobility of capital today. Only recently occupied territories or undeveloped colonies provide such instances of joint mobility of capital and labour.

There is greater scope of mobility of capital in those countries which are developing their industrial organization. Small scale industries and businesses requiring small capitals like agriculture, do not provide such a big scope, unless the methods employed and instrument used so far in these industries have been obsolete and uneconomic—agriculture in India, for instance, and improvements have recently begun to be introduced in it.

Security of investment is an essential condition of mobility of capital. No one would like so much to invest money in China or in the states of

South America which are torn by internal wars. A fabulously high rate of interest may induce the more adventurous people to invest their capital there, but the more prudent and cautious of the investors would prefer to earn a steady though low rate of interest in a peaceful country than risk the very existence of their capital in disturbed regions.

Institutions like banks that remit money from place to place, and stock exchanges that provide the media of investment help in the mobility of capital. The services of newspaper and news agencies and of telegraph and telephone that broadcast information on money and its market are essential. In the absence of such knowledge no one will even think of moving his capital.

## EXERCISES

1. Show reasons why interest is paid.

Would all savings cease, if no interest were paid?

Explain: "Interest is the reward of waiting."

2. Explain the law of demand in relation to interest.

'The rate of interest depends upon the equilibrium of the demand for and supply of capital.' State

what factors determine demand and supply respectively.

3. Analyse the conditions of demand for, and the supply of, capital, governing the rate of interest.

Why is interest charged?

4. What determines the rate of interest? How does this rate affect the savings of the people?

5. Point out the causes of the prevalence of very high rates of interest in Indian villages. Mention the factors which would tend to lower this high rate of interest.

6. Distinguish between *Net* and *Gross* interest and account for the disparity between them.

Which of the two types is more variable and why?

7. Government used to borrow at  $3\frac{1}{2}$  per cent. before the war. During the war Government had to borrow at 6 per cent. What were the causes for the increase in the rate of interest on Government loans?

8. Write out a list of questions you would ask a cultivator to find out the amounts he pays annually as interest to money-lenders, to a co-operative bank, or to other creditors. What sorts of answers would you expect from an average cultivator?

9. Analyse the various causes that lead to differ-

ences in the rate of interest (*a*) in the same market; (*b*) in different markets; (*c*) for short and long periods.

10. Is capital shy in India? Why? Mention the factors which interfere with the mobility of capital.

## Chapter VIII

### MOBILITY OF CAPITAL AND RETURNS ON CAPITAL

Mobility of capital tends to equalize returns on investments employed at different places in the same industry or those employed at different industries. If the efficiency of every other factor of production and facilities of transport and marketing as enjoyed by a certain industry at two different places are the same, the returns on capital invested cannot remain unequal for long if mobility of this factor is free and easy between these two places. The same will hold true in case of two or more different industries. A slight increase in the profitable application of capital at one place or in one industry will induce capitalists to move their capital to this place or industry from other places or industries which are yielding lower profits. Likewise, a slight fall in the investment income in a particular industry will lead to an outflow of capital from this industry. Greater returns in an industry mean, everything else being equal, less supply of capital than demand for it. An inflow

of capital will increase the supply and the returns will be lower than before. In other industries, where returns were comparatively poorer, there was a greater supply of capital than demand for it.

When some capital has moved out of them, supply will be reduced and returns on capital will grow bigger. If sugar industry is more profitable in Bihar than in U. P. for no other reason except that more mills have been constructed in U. P. than in Bihar, capital will steadily flow to Bihar where supply will be greater and profits reduced. Supply will be reduced in U. P. and profits will increase. If there is perfect mobility of capital, the returns on it will be equal in these two provinces. If the capitalists in Madras are finding it more profitable to produce cigarettes than sugar, capital will flow from sugar industry to tobacco industry till profits in both are equalized.

Likewise a slight fall in the investment income in a particular industry will lead to an outflow of capital from this industry. Greater profits in an industry mean, everything else being equal, less supply of capital than demand for it, and an inflow of capital will result in increased supply and

thus greater equilibrium of demand and supply and lower profits than before. In other industries where returns were less there was a greater supply of capital than demand for it; an outflow of capital from these industries will bring about a more perfect equilibrium between demand and supply, as supply will be less now, and returns will be more than before. Thus due to mobility of capital, returns on investment will have greater chances of different industries.

But such a perfect mobility of capital is not possible due to certain causes.

In the first instance, we have already noted the comparative immobility of fixed capital in short period. Money invested in such frozen capital cannot safely be moved till these goods have run their life. And during this period the lack of equilibrium between demand for and supply of capital in two industries will continue with the result that dividends will remain unequal for the time being.

In the second place, the new businesses with uncertain future will not exercise enough attraction on capital in spite of their being highly profitable. It is a question of undertaking risk and all

the investors do not possess this virtue in requisite quantity. Only a few take the initiative in a line of business. If it proves profitable, a few more follow suit; yet the majority wait and see what turn the business takes. It is only when the industry has given an unmistakable proof of its soundness and productivity that there is a rush for investment there.

Sometimes artificial barriers are put up against foreign capital being invested in a country. The danger of loss of capital due to political reasons is already there, new countries with undeveloped resources generally object to the investment of foreign capital as it will lead to the exploitation of their resources in the interest of foreigners and also to interference with internal liberty of native governments. Consequently conditions and stipulations regulating the investment of foreign capital are set up which hinder perfect mobility of capital.

One more point to note is the double taxation to which capital is subjected both in the country where it is invested and also in the country of the investor where he is taxed on the income he receives from foreign country. Due to this double taxation the difference in the returns from capital in



the two countries needs be a comparatively higher one before the mobility of capital will be possible.

Such frictional influences retard mobility of capital from place to place or from industry to industry with the result that differences in returns on capital invested continue. Certain industries supplied with inadequate capital continue earning higher returns, while others, with excess of supply, are poorly paid.

**Quasi-rent.** Such returns on capital goods continue at a high or a low level for the time being as the supply of such capital goods is temporarily limited. This being the case, they are of the nature of returns on land of a particular quality, whose supply is limited. Rent arises due to the fact that the supply of land is limited and it continues so without any possibility of an increase in it. Similarly the returns on capital goods, whose supply is limited though temporarily, accrue due to the same reason as rent, and that is why they have been termed as quasi-rent—as if they were rent, not rent properly so called. This quasi-rent may be positive when the supply of capital is less than demand, or it may be negative (a loss in this case) when the supply exceeds demand for capital. In any case it

continues but only for some time and is not of such a permanent duration as rent on land.

Quasi-rent can accrue on the efficiency of labour also when the supply of a particular class of labour is temporarily fixed. In a certain industry the supply of labour of an efficient kind may continue low either because the inflow of labourers in this industry is risky or controlled or very expensive to acquire the skill needed there. Dynamite labourers, governors of provinces or chartered accountants and actuaries continue receiving high salaries. Whatever the reason, if the supply of labour is less than demand for it, the workers will be enjoying, at least temporarily, higher wages than the normal returns in the long run when perfect equilibrium between demand and supply is established. Similarly if supply exceeds demand, and so is the case in unskilled or semi-skilled occupations like those of coolies and dock labourers, comparatively low returns will continue till demand and supply are equated. Such returns on the efficiency of labour also are called quasi-rent as they result due to a temporarily limited supply in a particular occupation.

Similarly we have quasi-rent on organising

skill. Successful organization requires skill of a very high type, which is partly acquired after a long training and costly experience and is partly a gift of nature. Organizers of a common type who just manage to earn a living count in large numbers, but red captains of industry, who can control and direct men and material are few and their number is not easily increased. They continue receiving very handsome salaries, much above the average and for longer periods than ordinary skilled labour. The supply of skilled labour even of a technical nature can be enhanced much quickly as compared to these organizers who, therefore, enjoy quasi-rent for long periods.

### EXERCISES

1. Comment upon the statement:

"Indian capital is limited, conservative and requires to be drawn out." Bring out the relation between the mobility of capital and returns on capital.

2. "However, as by and by the barriers of caste are losing their rigidity this particular cause of the immobility of capital in India is also losing its force." Explain how.

Are there other causes as well which hinder the

perfect mobility of capital in this country? Can you suggest some remedies for them?

3. What is quasi-rent? How does it differ from rent and interest? Can it accrue to labourers?

## Chapter IX

### PROFITS

As popularly understood, profits mean excess of receipts over expenses in a business. Here it is immaterial whether a producer contributes any other factor apart from enterprise or not. Irrespective of the fact that an individual producer may be owning the entire capital invested in his business or he may be his own landlord or his own manager, or all these at the same time, the excess of money realised in the business over expenses in the shape of cost of raw material and wages, will be called profits. The indefiniteness of this meaning will be clear from the fact that the income of a barber, after paying for the little depreciation on his instruments will be called profits as also the income of a big partnership business paying enormous wages and interest bill. In the first case they are more of the nature of wages while in the latter of the nature of salaries and profits really so called.

**Gross and Net profits.** In economics a distinction is made between gross profits and net

profits. If from the entire receipts of a business are deducted the expenses of production, i.e. money payments made to outsiders for all kinds of services rendered to the business, the remainder is termed as gross profits. If from gross profit a deduction is made for the remuneration of the employer for his own contributions of land, labour capital and organization, i.e., for normal profits\*, the residue is called net profits or simply profits.

**What is Profit?** Profit is the reward for enterprize. This should be distinguished from remuneration for organization. Organization can be transferred to the managerial staff who are paid salaries which in their nature are the same as wages paid to other labourers, but enterprize cannot be separated from the owner-producer. A person who has no capital cannot undertake any risk. A manager as such, has no capitalistic interest in the business; he simply organizes or co-ordinates land, labour and capital and is paid a contract-wage for his service. The remuneration for enterprize is not paid on a contract basis. It is a residue left after everybody else has been paid on contract basis. In the case of one enterprizer being also

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\*See Chapter on Supply under Exchange.

an organizer, the residue may count as the payment for both organizing skill and risk but both these can be separated and should be understood as independent items.

**Wherein the risk lies.** An entrepreneur makes a forecast of the receipts and expenditure of a business before actual production. The receipts are calculated on the basis of the present market conditions, and prices that will obtain in the near future when entrepreneur will be putting his supply in the market. On that basis he plans his business; he decides on the goods or services he is going to supply and the scale of production. This being settled, he proceeds to bring together the remaining factors of production and enters into a contract with the agents of production to pay them a definite rate of remuneration for their services. As has been explained before his guide in such contracts with the landlord, labourers, capitalists and managers is the prospective, not marginal, productivity of each factor of production. If his forecast of this productivity of factors comes out right and also the expectation of price which he will realize on his produce, it is well and good and the

entrepreneur makes a profit. But if either the prices at the time of disposal of goods are low or the productivity of the factors turns out to be less than expected the entrepreneur will suffer a loss.

**Factors which create risk.** Whatever affects the prices of a commodity through its demand and supply, creates an element of risk in the business of that commodity. If there occurs a *change in fashions* and an article so far held in popular favour loses in its demand, the price will be reduced and the producers may suffer a loss. On the other hand, a favourable turn in fashion or custom will increase its demand and raise the price to the handsome profits of the producers on the supply side, discovery of a *substitute* will adversely effect the prosperity of the business in the original article as the manufacture of artificial silk has reduced the profits of real silk industry and the use of paper bags has lowered the profits on gunny bags. It is possible that the machinery which has already been installed may be rendered obsolete or out of date by a newly *invented process* that can turn out much cheaper goods. It will spell loss to the old producers.

Improvements made in the means of trans-



port and communication and the *discovery of new markets*, extends the sales of the goods and mean more profits. Similar is the result of a general rise in the prosperity of the old customers of a business. But if new firms start business and begin to compete in the markets which were solely held by other producers, the latter begin to suffer.

If *strong foreign competition* has to be faced from other quarters, the profits are reduced much more heavily. Lancashire was controlling till the war the entire supply of foreign cotton yarn and piece-goods in India. The War gave an impetus to the development of Indian Cotton Industry and Japan also got an opportunity to improve her cotton industry. Lancashire has been, therefore, facing the double-sided competition in Indian markets and losing much of its business.

Labour troubles like *strikes* and *lockouts* seriously reduce the supply and increase overhead charges. *Political unrest* may make marketing a very difficult and risky business as in China and some of the modern European states. Boycott and political sentiment may lead to an unexpected increase or diminution in the demand for goods as happened in India in 1930 and China in 1932.

*Natural calamities* like fire, water and earthquake disturb the entire system of production and upset the market equilibrium.

All these factors create risks. Risks like those from fire or seas can be insured against, but not the rest and they are a source of loss or profit to producers.

**Inequality in profits.** A greater inequality is to be found in profits than the inequality in wages or in interest. Mobility of labour or capital can and do help considerably in equalizing wages or interest on capital engaged in different businesses, but in case of profits there being a greater scarcity of enterprize and little chance for mobility, vast difference is met with from an individual to an individual and this difference has a tendency to perpetuate itself due to certain reasons.

The first is the lack of capital with people in general. As has already been pointed out, no enterprize is possible without capital, the comparatively poor producers cannot have much to risk. 'No risk, no gain' principle is applicable to business with greater force. Even if the poorer enterprizers borrow capital in good quantities,

they will not dare risk it so much as an entrepreneur who owns his capital. The rich enterprizer risks his capital and makes profits which go to increase his capital in future and his power to risk further. Thus the inequality in enterprize and consequently its remunerations go on widening.

The second reason is that for the success of a business the enterprizer has to establish a goodwill. He may start with buying one, but such a goodwill will not be substantial as otherwise why the original business-man should think of selling the goodwill of his business. At any rate, the entrepreneur, who starts with a bought goodwill, has better chances of prosperity than one who has to create one for himself. This latter enterprizer has to spend considerable sums on canvassing and advertising before the prospects of the business brighten up. If they do not, he suffers.

Another factor which makes for the success of an enterprize is the knowledge, not only of the tastes and fashions of the consumers and technicalities of production, but of the inner secrets of the business itself which are jealously guarded by the ring dealers in a commodity. Until he is admitted into that circle, and he has to hang on for pretty

long for that admission, his success will be more precarious than certain. All enterprisers do not succeed in that, hence the inequality in profits.

**Speculation and gambling.** Risk is unavoidable in a business, but there are risks and risks. It is one thing to risk a rupee for getting 19 annas or being left with 14 annas, but it is quite another thing to have the rupee either doubled or lost altogether. In normal times businessmen have to bear only legitimate risk arising from the change in fashion or new invention or monetary policy of the state while in abnormal periods of war or crisis these legitimate risks are increased.

Apart from the above-mentioned risks that every business-man has to take, there are certain other risks which are undertaken for their own sake. There is not even the intention of producing any useful commodity or service to be sold. It is simply competition among people in their power of anticipating changes in prices of articles so that if they expect the prices to rise, they buy the article in the hope of selling it at a higher price and if the prices are expected to fall, they try to sell. It is called *speculation* which in some cases amounts to sheer gambling.

There is sense in storing or selling away any commodity if the prices so permit, but there is little sense in choosing specially those commodities, like shares, stocks and debentures that are liable to great risk. If this spirit of speculation is carried too far, it becomes devoid of all sense and is degraded to the level of *gambling*, even below that of the lotteries. In such cases there is not even a semblance of actual buying and selling; no goods change hands, but they remain with their owners or brokers and people gain or lose by mere price fluctuations as they undertake to buy and sell at some future date. Suppose A is a risk taker of this kind. He finds that the shares of Central Bank of India are rising in price and anticipates still higher prices. Suppose the present market price is Rs. 200 and he expects the prices to rise to Rs. 205 in a fortnight. He will enter into a contract with B, a broker, to buy from him ten shares at Rs. 202 each after a fortnight. He will gain if the price rises beyond Rs. 202 at that time, but loses if the shares fall in value or do not rise upto Rs. 202. In this transaction no shares will change hand, quite possible there may not have existed any shares on whose basis the contract was made. The

transaction took place because A expected the price of shares to rise at least to Rs. 202 but the broker did not expect such a rise. He laid a wager on that difference of opinion and one gained at the cost of the other.

Such gambling is also practised on a very large scale in markets of gold, silver, oil, wheat, cotton and other articles of great standing and importance. A very rich merchant will buy entire stock of gold and its future produce of, say, three months. By controlling the entire supply he can control the price. If he succeeds in doing it well, he becomes a millionaire; if there is somebody else sitting tight on his resources and defeats this man's plans, he will become a pauper. Kings are consequently made from time to time, not crowned kings but uncrowned ones in the stock market. They are those men who *corner* the entire stock of an article and reign in the market for that commodity. If the circumstances arise favourable to them, they rise like mushroom growth—there grow during the war gold-kings, silver-kings, cotton-kings, oil-kings, iron-kings and so on. But if there comes a crash as it did at the beginning of the present depression they are

reduced to beggary.

Such speculation and gambling simply transfer wealth from individuals to individuals, not in any legitimate economic activity but through the prosperity of a country. It results in a net loss to the community as capital is dissipated and not utilized in the production of real goods and services and consumers suffer by way of having to pay higher prices. It will be in the interest of the community if some kind of control or check is exercised upon such activities of rabid speculation and monopoly by the society.

### EXERCISES

1. Explain the term 'Profits'. Why is the payment of profit necessary in the economic system of to-day?

'The field of enterprize is vast in India, but enterprize has been and is slow in appearing.' Why has this been the case?

2. Make a list of all costs of production of a village weaver. How would you determine his profits?

Would you classify the income of an inventor as wages or profit?

3. 'A' establishes a small factory for crushing oil-seeds with a capital investment of Rs. 50,000. At the

end of the first year of working, he finds he has in hand from the sale-proceeds of the oil a sum of Rs. 12,000 after paying for labour and the cost of raw materials. Under what heads should this amount be apportioned and why?

4. What does 'gross profit' consist of? How does it differ from 'net profit'? Is profit the reward for enterprise? State the factors which create risk.

5. Account for the existing inequality in profits. If profits were eliminated, how would industry fare?

6. Suppose a pair of shoes can be made by hand in a day of 8 hours by a workman who is paid at a rate of 4 annas a day, and that a similar pair of shoes can be finished in 5 minutes by a machine costing Rs. 1,600 and worked by an operative who is paid at Rs. 2 per day of 8 hours. If all other costs of operating the machine and the interest and depreciation amount to Rs 10 per day, find out the smallest daily demand which will make the use of the machine profitable.

7. Is speculation not a sort of gambling? Why is it allowed in business then? Does the speculator increase the wealth of the community? How?



## Chapter X

### MONOPOLY PROFITS

**Monopoly defined.** Monopoly in economics means such control over the supply of an economic good as enables the monopolist to regulate its price. The monopolist may be the producer or the seller of that commodity.

When buyers form a combination to obtain sufficient control over the demand of any commodity and thus regulate its price, they are said to create buyers' monopoly. In practice buyers' monopolies are unusual.

The distinguishing feature of monopoly is the ability to control a price, and to control a price it is necessary that the combination should control a large majority of the supply.

A *complete* monopoly is one which controls the total supply. A *partial* monopoly does not control the entire supply but is enough to influence the price.

**Theory of monopoly.** The net profit on every unit of an article sold is equal to the difference between demand price and supply price of

that article. Total net profit is equal to the profit on every unit multiplied by the total number of units sold. The object of the monopolist is to make his total net profit as great as possible. This he manages to do by curtailing the supply and raising the price. He performs his experiment of selling the commodity at different prices. He may begin by charging very high price for his article, but if he does so, he may not be able to maximize his profit. If that is the case, he would reduce the price gradually until at last he has discovered the price which makes the monopoly profit a maximum. The price which makes the monopoly profit a maximum is called the *monopoly price* and the total net profit so obtained is the *maximum monopoly profit*.

**Law of monopoly price.** A numerical example will serve best to illustrate this law. Consider the case of hair oil, a patented article in general use, and suppose that it is being produced under the operation of the law of increasing returns so that the more of it is produced the lower is the cost of production. The table given below is drawn up on the assumption that the monopoly profit is the same thing as the sale-proceeds

(receipts) less total cost.

Price	Demand (Bottles)	Receipts	Unit Cost	Total cost	Monopoly Profit
Rs. as.		Rs.		Rs.	Rs.
1 4	500,000	625 000	5 annas	156,250	468,750
1 0	650,000	640,000	4½ „	180,000	460,000
0 12	1,000,000	750,000	4 „	250,000	500,000
0 10	2,000,000	1,250,000	3½ „	437,500	812,500
0 8	3,000,000	1,500,000	3 „	562,500	937,500
0 6	5,000,000	1,875,000	2½ „	781,250	1,093,750
0 4	12,000,000	3,000,000	2 „	1,500,000	1,500,000
0 3	15,000,000	2,812,500	1½ „	1,406,250	1,406,250
0 2	18,000,000	2,250,000	1 anna	1,125,000	1,125,000
0 1	20,000,000	1,250,000	¾ „	937,500	312,500

It is evident from this table that the price which affords the maximum monopoly profit is 4 annas. Above or below this price, the profits decline, although the lower the price, the greater the demand and the larger is the demand, the lower the cost of production per unit. Hence the monopoly price is 4 annas.

This *monopoly price*, it should be carefully kept in mind, *is not necessarily a very high price*. In this example, the price most profitable to the monopolist is double the expense of production. The amount sold at the monopoly price is generally about half of the amount sold at the competitive price, although it may vary from this considerably

with different conditions of demand and supply.

In actual practice, the monopoly price is a little lower than that arrived at theoretically. The price of oil in the case assumed above is likely to be fixed at something less than 4 annas. The reason is that a monopolist hardly enjoys exclusive control of the monopolized goods and competition even though not in active operation is an ever present possibility. Prudence alone dictates what prices ought to be charged to secure the largest monopoly profits.

A shrewd monopolist fully understands that there are different strata of demand, each controlled by somewhat different considerations and he takes advantage of this fact by offering different grades for sale at different prices. That which is meant for the mass of consumers is put up at the price—4 annas say, which affords the maximum monopoly profit and is sold under the firm name simply. Along with this is offered at a higher price, say 10 annas, the same article, coloured a little differently and sold under the designation "superior." For those consumers who would prefer to pay Re. 1 if they believed that by so doing they were getting a better article than their neighbours, the same arti-

cle is scented a little more delightfully and wrapped more elaborately, and then sold under the name "superfine." The "superior" article is put on the market at a price which would attract the comfortable middle-class, fond of quality and also mindful of expense. The "superfine" grade of product is offered at a price commensurate with the adjective used to designate it. To the rank and file of consumers who would have the best for their money or else would go in for substitutes, the same article is sold at a price which would induce all such men to purchase it. In this way not only is a larger margin of profit secured but consumers are reached who would otherwise not even think of having the article.

#### KINDS OF MONOPOLIES

**Legal monopolies.** A legal monopoly is one which is due to a special privilege granted by a king or government, e.g., the East India Company. Monopolies given by means of patents or copyrights are also legal monopolies.

**Natural Monopolies.** If there is an industry which ensures lower cost of production and greater utility to the public provided the whole of it is under a single manage-

ment, it tends to become a monopoly. A water supply company, for example, requires only one set of pipes, if it alone has to supply water to a certain city; but if there are two companies in that city, two sets of pipes are required and almost double the expense. Similar is the case with a telephone company or a gas company. In all these cases, if the company is run under a single management, it decreases the cost and increases the utility thereby conferring a great benefit to society, and for that reason deserves the monopoly profit. Telegraph, Post office, railways, coinage, electric power etc., fall under this category.

**Industrial monopolies.** When industries manufacturing the same product or similar products combine, they are said to form an industrial monopoly. Examples of such combinations are the large corporations or "trusts" of America and the "kartels" of Germany. These combinations either buy up all competing industries or force them out of business by underselling them. But in spite of this, they rarely obtain the complete monopoly for fear of potential, if not real, competition. Where the cost of production decreases rapidly with an increase in the scale of production,

monopolistic combination is most easily formed.

**Fiscal monopolies.** A fiscal monopoly is an industrial monopoly created by the Government for the purpose of obtaining the monopoly revenue as part of its revenue. Salt monopoly and opium monopoly in India are the examples. The fiscal monopoly is one form of taxation.

#### IMPORTANCE OF MONOPOLIES

Some businesses which enjoy exclusive franchises include those branches of production that are most vital to the general well-being, such as water, gas and railway companies. Upon natural monopolies of organization which embrace the chief transportation businesses of the country, depend, all other businesses and this dependence increases with the division of labour and concentration of production. Personal monopolies which arise when one individual controls the supply of a given article, either because he has unique talent or because he employs a secret process so superior to all other processes that he can drive all competitors from the field, exert in the aggregate a considerable influence on the distribution of wealth.

#### LIMITATIONS ON MONOPOLY POWER

Monopoly power is limited by the possibility

open to buyers of substituting other goods for those which are monopolized. There being no substitute for salt, the monopoly of salt is favourable to the monopolist. The range of substitution in the case of matches is also narrow and because the matches are looked upon by every one as necessary, the monopolist may make considerable changes in the price without seriously affecting the demand.

Another limitation on the power of monopoly is imposed by the possibility of competition which may deprive the monopoly of its control over the supply. To capitalistic monopolies, the possibility of exciting competition and losing control of the supply is an ever present danger. Sugar trusts, for instance, cannot continue to drive huge profits as large competing sugar factories are likely to enter the field. So great a danger, however, does not exist in the case of personal and natural monopolies.

Again, the possibility of legal interference imposes limitations on monopoly power. This applies specially to natural and capitalistic monopolies. In the case of the former it is being recognized more and more fully that the government interference only can regulate the business efficiently.



Taken together the three limitations confine the price making power of monopolies within rather narrow limits, and serve as effectual checks on reckless exercise of monopoly power. The possibility that other goods may be substituted for the monopolized product applies to all monopolies, although the force with which it acts varies in each case with the range of substitutions open to consumers. The possibility of competition threatens all except personal monopolies of ability, legal monopolies and natural monopolies of location. Legal interference has been actually applied to natural and capitalistic monopolies. Monopoly presents a serious problem or legal interference is deemed necessary, only when the range of substitute goods is narrow and the obstacle which competitors must overcome in order to enter the field, formidable.

#### MONOPOLY AS RELATED TO THE LAW OF PRODUCTION

**Monopoly and Diminishing Returns.** If the commodity is produced under the operation of the law of diminishing returns, the cost of production increases as more and more is produced. Under such circumstances, the monopolist is doubly

benefited. He curtails the supply and thereby increases the market price of the product. And when less is produced, the cost of production is decreased. Thus the monopolist not only makes a profit from the increased price at which he sells the curtailed supply but also from the diminished cost of production.

**Monopoly and Constant Returns.** In the case of constant returns, the monopoly profit on each unit of the commodity equals the increase in price.

**Monopoly and Increasing Returns.** In case the law of increasing returns acts, it frequently happens that one firm can reduce its cost and undersell its rivals. This firm, therefore, succeeds in driving out all competitors and obtaining a monopoly. If a small increase in the amount produced permits considerable saving in the cost of production, then the producer who produces most cheaply increases his production and sells his increased supply at a lower price to the customers of his competitors. The competitors, on the other hand, cannot afford to produce on a large scale, because by doing so the supply exceeds the demand and they have to sell at a loss. Thus whenever

there is decreasing cost of production, the strongest firm in most cases obtains the monopoly, although sometimes two firms of equal strength may exist side by side for a long while. If factories of a certain size have been built and production on a larger scale requires complete rebuilding and reorganization which requires enormous capital, so that the firm is temporarily working with increasing costs then several firms of equal size may remain as competitors in the same district and new firms may be attracted because of the advantages of concentration of industries.

When the supply is curtailed, the cost of production increases. If the market price remains fixed, the monopoly profit per unit is reduced by that amount by which the cost of production rises. But with the curtailment of the supply, the market price of the product is increased. And the producer also is able to affect some economy in the cost of production by turning out some labourers and releasing a little amount of capital, thus reducing the charges of wages and interest to some extent. Hence if production is slightly increased, the monopoly profit is made a maximum under such conditions.

Sometimes a monopolist uses the profits to lower price even below the cost of production in other markets and thus drive out other producers and increase the area of his control. This happens particularly when there is "cut-throat" competition and each producer is engaged in selling at a price lower than that of his competitor.

The effect of increasing returns in creating monopolies is greatly limited in practice. It is limited by the fact that increasing returns cease to act when production becomes very large. It is also limited by the possible competition of other producers and for that reason the monopoly cannot usually reach the price of maximum monopoly profit.

#### MONOPOLY AND ELASTICITY OF DEMAND

A monopoly as such is not likely to be a very profitable concern, if the least variation of price causes demand to vary widely. Its control of output gives little effective control of price, since even a small rise quickly curtails the demand and a slight fall only brings it nearer to the ordinary competition level. If the monopolized commodity is generally used by the rich, the monopoly gives higher profits.

But when the demand is inelastic, the mono-

polist can raise the price very high specially if there are no substitutes, such as in the case of salt. Conventional necessities which custom compels a certain class of society to use fall into this category.

The effectiveness of any monopoly depends on the whole series of causes that affect the elasticity of demand. These causes, as we have seen, are the position in the range of incomes, the possibility of substitutes, the proportion to total expenditure, and so on.

If the monopolized commodities are those whose consumption is injurious, e.g., tobacco, opium, liquors, the raising of price has a beneficial effect upon society, because if the price is raised, people buy less of the monopolized commodities and more of the competitive commodities. But if the monopolized commodity is a necessity, people buy it even at a higher price and have less money to spare for other articles of use, with the consequence that the consumption of the latter is decreased. The whole nation, therefore, is injured for the benefit of a few men who are the producers.

#### EXERCISE

1. Define *monopoly*, and explain the theory of monopoly price.

2. What do you understand by 'Maximum monopoly revenue' and 'Monopoly price'? What reasons may persuade a monopolist to take less than the monopoly price?

3. Trace the relation between monopoly and increasing returns. What limits the effect of increasing returns in creating monopolies?

4. Under what conditions is it profitable for a monopolist to sell substantially the same goods at two or more different prices?

5. What businesses serve society better when conducted as monopolies? Illustrate the various ways in which a monopoly can arise.

6. What determines the price fixed by a fiscal monopoly? A natural monopoly? A legal monopoly? An industrial monopoly?

7. Has the elasticity of demand anything to do with monopoly? Illustrate your answer. Comment on the following:

"A monopoly in cotton or apples would be comparatively unprofitable beside a monopoly in wireless valves or in aluminium."



# VISUAL AIDS





## VISUAL AIDS

Visual aids are devices which enable the eye and consequently the mind to grasp what would otherwise not be so easily intelligible. They are of various forms to suit various purposes. Some of them are geometrical figures like rectangles, squares, circles and others. Some are curves drawn to satisfy the given conditions.

### RECTANGLES

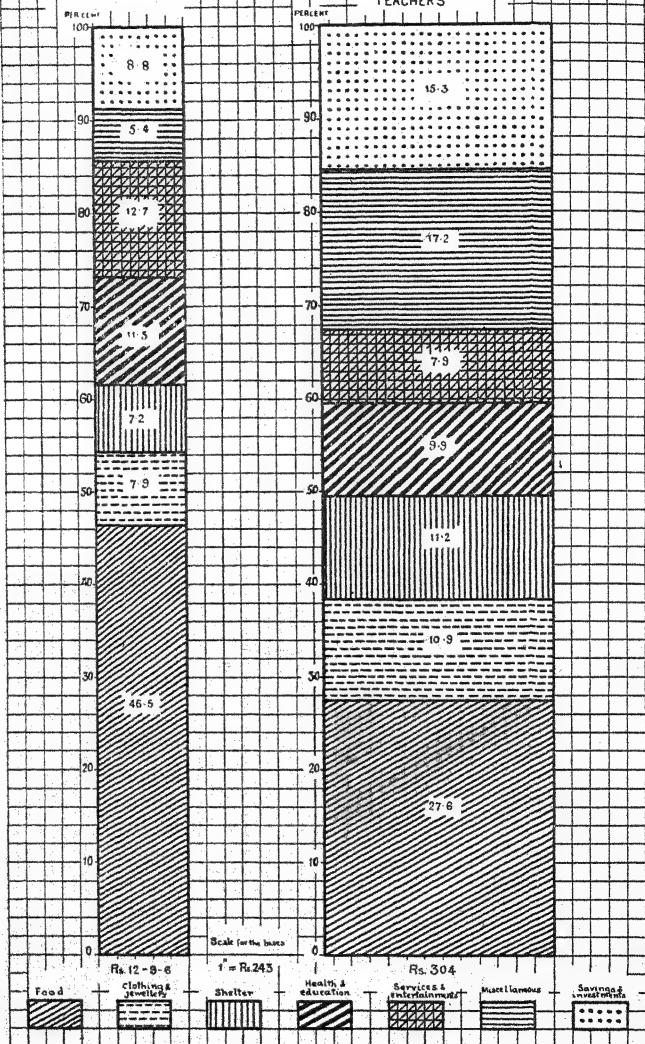
#### FAMILY BUDGETS

If a detailed account of expenditure be given, a family budget becomes a long list of figures which tires the eye and confuses the mind. To aid vision and intellect under such circumstances, diagrams are used. Any and every diagram, however, is not the best to use; only the most suitable should be selected for the purpose. *Rectangles are the best to employ for the diagrammatic representation of family budgets.* To illustrate how this is so, we shall make use of the two family budgets given on pages 184 and 185.

PERCENTAGE EXPENDITURE OF THE TWO FAMILIES ON  
DIFFERENT HEADS

GOLDSMITH'S

TEACHER'S



A rectangle has two dimensions, length and breadth; therefore two facts may be shown at one and the same time. Along the breadth is usually shown the income of the family and along the length, its *percentage* expenditure. Since the total percentage expenditure in each case is necessarily equal to 100, the lengths of all rectangles representing as many family budgets are kept to be the same. But the breadths of these rectangles are not equal, because the incomes of the families differ; they are, however, in the same proportion in which are the incomes of the families concerned. In the case of our family budgets, the incomes are Rs. 304 and Rs.121 9as. 6p. respectively. They bear the ratio 5:2. Hence the base of one rectangle is to be two and a half times the base of the other rectangle.

In the annexed diagram, two rectangles are shown. The one on the left hand side stands for the goldsmith's family budget and the other on the right hand side for the teacher's. For the reasons given above, their heights are equal but their bases are in the proportion 2:5. For the facility of measurements to save both time and bother, the rectangles have been drawn on a squared paper divided into tenths of an inch. When such a

squared paper is used and a height of ten inches is chosen to represent percentage expenditure, we at once get 100 small divisions to work with. A height of 5 inches may also be used with advantage, as in our diagram. But whether ten inches are taken or five, the breadth of the rectangle should not be disproportionate to its length; it should neither be too small nor too big. The diagram must give a pleasing appearance, and for this purpose a convenient scale of measurement for the income to be shown along the base is necessary.

No hard and fast rule can be laid down for the choice of a suitable scale which is more or less a matter of convenience, purpose in view, and the total space available for the diagram.

To show the distribution of income over various heads of expenditure, each rectangle has to be sub-divided. This sub-division is carried out thus:

First, the scale of percentages is marked along the length of each rectangle. Then the cumulative figures of the percentage expenditure on various heads of expenditure are worked out. This is done by simple addition. For example, the cumulative figures of the percentage expenditure of the

teacher's family (*vide* page 184) will be 27·6,  $27\cdot6+10\cdot9=38\cdot5$ ,  $38\cdot5+11\cdot2=49\cdot7$ ,  $49\cdot7+9\cdot9=59\cdot6$ , and so on. They are given in the following table:

Heads of expenditure	Teacher's family		Goldsmith's family	
	Percentage expenditure	Cumulative percentage expenditure	Percentage expenditure	Cumulative percentage expenditure
1. Food	27·6	27·6	46·5	46·5
2. Clothing & jewellery	10·9	38·5	7·9	54·4
3. Shelter	11·2	49·7	7·2	61·6
4. Health & education	9·9	59·6	11·5	73·1
5. Services & entertainments	7·9	67·5	12·7	85·8
6. Miscellaneous	17·2	84·7	5·4	91·2
7. Savings & investments	15·3	100·0	8·8	100·0
	100 %		100%	

Now, these cumulative figures are marked along the scale of percentages in their proper places and from the marks thus obtained, horizontal lines are drawn parallel to the base, thus dividing the entire rectangle into sections or components. Since

there are seven heads of expenditure, each rectangle is divided into seven components. These components should have the same order in which the various heads occur in the scheduled expenditure of all the families. If the heads of expenditure in the case of all families do not run in the same order, they must be made so.

The rectangles must be placed side by side in a vertical position with their bases falling in the same straight line. This brings corresponding components against one another and thereby renders comparison easy. To further facilitate comparison, corresponding components are often given the same tints, but colours should not be used, if they are likely to be expensive and also to spoil the appearance of the diagram. Only a few know how to put in colours satisfactorily and consequently the alternative method of hatching, barring, crossing, dotting etc., is used in place of colouring. This is fully illustrated in our diagram which looks quite attractive even without colours. When components are thus treated, they stand out quite distinctly from one another, although forming part of the same rectangle.

After the diagram is constructed, a glance at

it is enough to give a clear picture of the proportional expenditure on the various heads, because the areas of the components bear the same ratio to one another as the expenditures incurred on the items which they represent. If two components have the same height, i.e., represent the same percentage expenditure, their areas and therefore the expenditures which they stand for must have the same proportion to each other as the bases of the components. The bases may be equal, if the two components belong to the same rectangle; they may differ if one of them belongs to one rectangle and the other to the other rectangle. In case they differ, the expenditures incurred on the two items will have the same ratio as the incomes of the two families concerned. If the areas of two components are equal, expenditures on corresponding items are also equal, but the percentage expenditures may or may not be equal. They are equal, if the two components belong to the same rectangle. If not, the percentage of expenditures will be found in the same proportion as the incomes of the families. Several such interesting conclusions may be drawn from the diagram.

Good diagrams or charts must possess the



merit of being easily compared. They must be capable of being read rapidly. They must be accurately and neatly drawn. They must have a suitable heading and scale. The following mnemonics will be found of great help in remembering these points:

Comparison

Heading and legend

Accuracy

Rapidity of reading

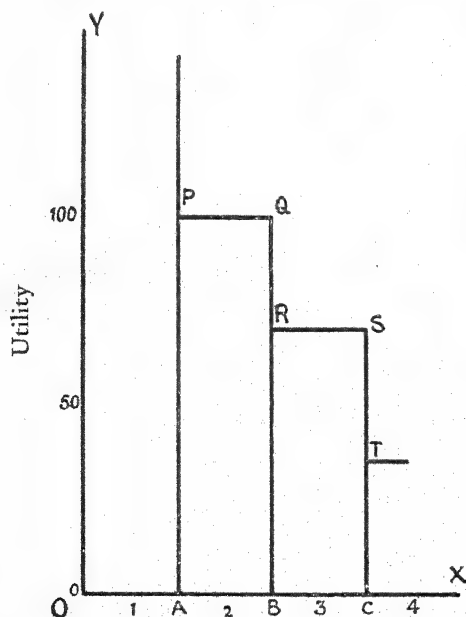
Tidiness, neatness.

Every letter of the word 'CHART' is made use of.

#### UTILITY

Rectangles may also be used to represent utilities derived from the consumption of successive units of an article. Thus if the first cup of water yields infinite amount of utility, a long rectangle may be drawn with its top open to represent this utility. If the next cup taken in succession gives 100 units of utility (*vide* page 104), another rectangle may be drawn whose breadth is the same as that of the first and whose height is conveniently chosen to represent 100 units of utility. Similarly for the third cup giving 70

units of utility, a third rectangle may be drawn, whose breadth is the same as that of the previous ones and whose height is just enough to represent 70 units measured on the same scale as 100 units taken before. The base of each rectangle represents one cup of water, and the height of each is made proportional to the amount of utility derived from each cup of water. All the rectangles



Cups of Water

Diagram 1

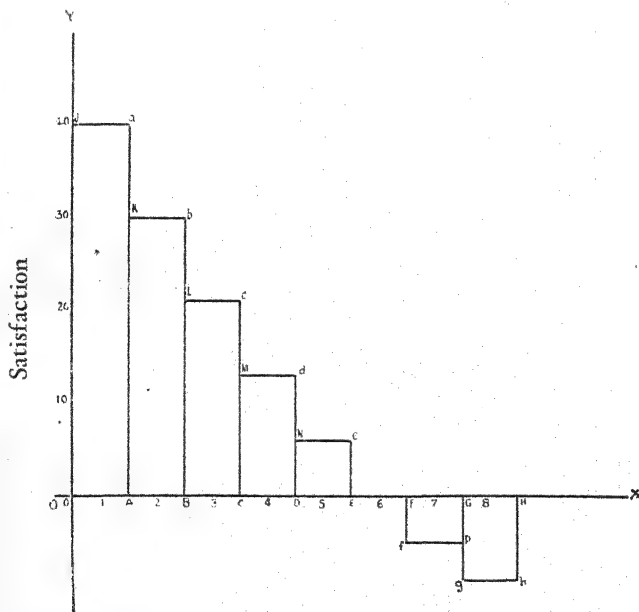
are placed in such a way that their bases fall on the horizontal line OX, and since the cups were taken successively, the bases are joined to one another as shown in diagram 1.

As the bases of all rectangles are equal and their heights proportional to the utilities enjoyed, the area of each rectangle is proportional to the amount of utility. The area can be increased by increasing the height or the base. If, for example, the height AP of rectangle no. 2 representing second cup of water is increased because it yields more utility, the area of the rectangle AQ is increased which means that the utility got from the second cup of water is also increased. But if the base AB is increased because the size of the cup gets bigger, and the height remains unaltered, the area of the rectangle is increased and consequently the amount of utility derived from this cup is also proportionately increased. This means that if it is desired to get as much utility from the third cup as from the second the size of the cup may be suitably increased.

#### DIMINISHING UTILITY

The manner in which the utility derived from the continued consumption of a commodity falls

may be easily shown by means of rectangles. Let the lines  $OX$  and  $OY$  be drawn at right angles to each other, and let the units of the commodity consumed be measured from left to right along the horizontal line  $OX$  and also let some arbitrary scale of utility be imagined, and set off on  $OY$ . Now, as before, rectangles may be drawn to represent utility from successive units.



Oranges  
Diagram 2

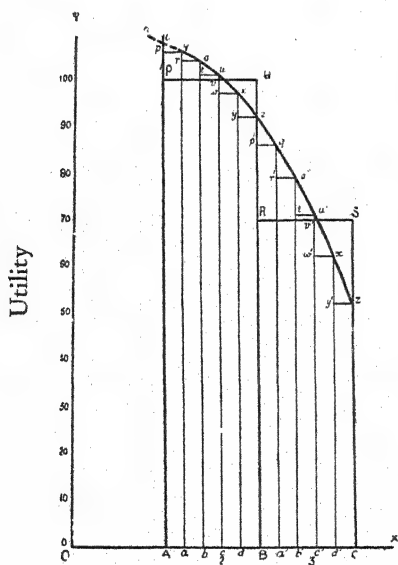
Take the case of oranges (pages 105, 123) for illustration. Rectangles nos. 1, 2, 3, 4 and 5 are drawn exactly in the same way as in diagram 1, to represent successive utilities 40, 30, 21, 13, and 6. The sixth orange yields zero utility to the consumer. To put this fact in diagram, the height of rectangle no. 6 has been reduced to zero, keeping its base the same as in all other cases. This makes the rectangle change into the line EF (diagram 2).

In the language of the mathematician, pleasure is regarded as a positive sensation and pain as negative. If, therefore, vertical distances above the line OX be taken to be positive, those measured below this line in the opposite direction must be taken to be negative. Hence the negative utilities derived from the seventh and the eighth oranges are represented by rectangles whose bases lie on the same horizontal line OX but their heights are measured in the opposite direction; thus they look like figures turned upside down. Like positive utilities, negative ones are represented by lengths proportional to them.

#### DIVISIBLE AND INDIVISIBLE COMMODITIES

Divisible and indivisible commodities have

already been explained on page 159. Both these sorts of commodities can be diagrammatically represented by rectangles. But if the commodity is divisible, every unit of it can be further subdivided without its identity being destroyed, and hence the rectangle can also be subdivided into smaller rectangles to represent the fractions of that unit. This is fully illustrated in the diagram given below.



Cups of Water  
 Diagram 3

The rectangle  $APQB$  which stands for the utility of the second cup of water is broken up into five thinner rectangles having their bases equal and heights in proportion to the corresponding utilities. The areas of the rectangles  $Aq$ ,  $as$ ,  $bu$ ,  $cx$ , and  $dz$  are together equal to the area of the big rectangle  $AQ$ . The second cup of water gives 100 units of utility. When this quantity of water is divided into five equal portions, the sum total of utilities derived from the portions must equal the utility got from the whole cup of water, that is, must equal 100 units. But the utilities from the successive portions must ordinarily be in the descending order, that is to say, the first portion consumed should generally give more satisfaction than the next portion consumed and so on. For this reason the rectangle  $Aq$  (diagram 3) is bigger than the rectangle  $as$  and the rectangle  $as$  is bigger than the rectangle  $bu$ . The five smaller rectangles represent the utilities  $\frac{106}{5}$  ( $106 \times \frac{1}{5}$ ),  $\frac{104}{5}$ ,  $\frac{101}{5}$ ,  $\frac{97}{5}$ ,  $\frac{92}{5}$  respectively. 106 is represented by  $pA$ , the height of the first smaller rectangle and  $\frac{1}{5}$  is represented by  $Aa$ , the base of this rectangle. Similarly,  $ar$ , the height of the next smaller rectangle stands for 104 and  $ab$ , the base of this rectangle for  $\frac{1}{5}$ . So

on and so forth. The sum of these five utilities is 100.

The third cup of water has also been broken up in a like manner. The smaller rectangles Bq' a's', b'u', c'x', and d'z' make up the area of the big rectangle BS representing 70 units of utility, and stand for  $\frac{8}{5} \cdot 6$ ,  $\frac{7}{5} \cdot 9$ ,  $\frac{7}{5} \cdot 1$ ,  $\frac{6}{5} \cdot 2$  and  $\frac{5}{5} \cdot 2$  units of satisfaction respectively.

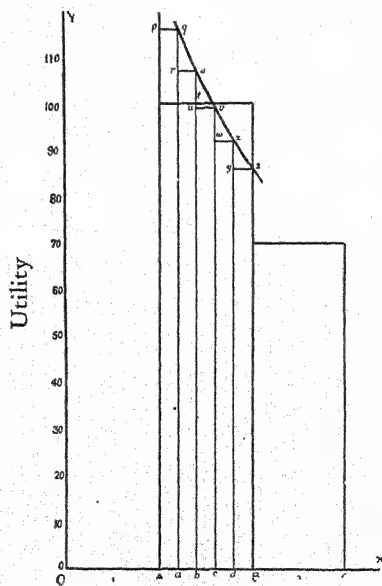
This division of rectangles may be carried still further, until at last the resulting rectangles are squeezed into straight lines practically. When this state is reached, further sub-division is naturally stopped. But the line-like rectangles will be so numerous ultimately that they may be more confusing to the eye. To avoid confusion, only the tops of those rectangles may be joined by lines and then their heights be erased. This will give a smooth curve. Care should be taken to join every two consecutive tops by means of a *straight line* and not by a curve. Since the line-like rectangles will be very close together, the resulting curve will look like a smooth one. It will be almost like the one shown in the diagram. It passes through the right-hand top corners of the smaller rectangles. The curve is broken at its left extremity, because



it is intended to show that if produced, it will tend to run like that.

*Utilities derived from indivisible commodities are represented by rectangles and those obtained from divisible commodities by a curve.*

The following diagram 4 is another diagram to illustrate the same point.



Cups of Water

Diagram 4

Here also the big rectangle has been broken up into smaller ones in such a way that the area (100) of the big rectangle is equal to the sum total of the areas of the smaller rectangles. These smaller rectangles now stand for the utilities  $\frac{11}{5}$ ,  $\frac{17}{5}$ ,  $\frac{9}{5}$ ,  $\frac{2}{5}$  and  $\frac{8}{5}$  respectively, which are in the descending order as in the former case. A smooth curve is shown in the diagram to pass through the top corners as before.

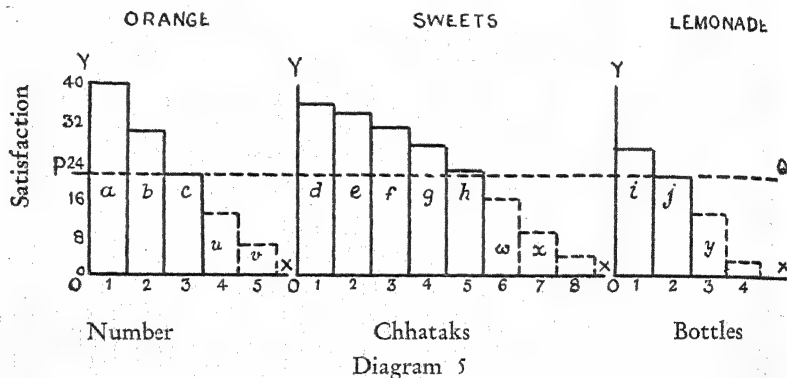
By comparing the two curves of diagrams 3 and 4, it will be noticed that they differ in nature, although made out from the same big rectangle. The one in diagram 3 faces the horizontal line OX and is called *concave* with respect to this line (OX). The other curve in diagram 4 is turned away from the horizontal line OX and is called *convex* with respect to OX.

#### LAW OF EQUIMARGINAL UTILITY

This law may be diagrammatically illustrated in the following way:

First, marginal utilities derived from the successive units of each commodity are represented by means of rectangles in separate charts. The scale for the unit of each commodity should be so selected as to make the bases of all rectangles for all com-

modities equal. The heights of the rectangles which are to be proportional to the utilities they represent should be measured on the same scale for all the commodities. The separate charts should be placed close to one another in such a way that their horizontal lines OX fall in one and the same straight line, as indicated in the diagram below.



The broken line PQ drawn horizontally across the rectangles through the mark 21 of the scale shows that when the marginal utility stands at the figure 21, the consumer cannot have more than *three* oranges, *five* chhataks of sweets and *two* bottles of lemonade. As many units of each commodity will be purchased as are represented by those rectangles which are either crossed or at least touched by the

line PQ. In the case of oranges, rectangles 1 and 2 are crossed and rectangle 3 is just touched; hence 3 oranges will be purchased. In the case of sweets, rectangles 1, 2, 3, 4 and 5 are crossed and none touched; hence 5 chhataks will be purchased. In the case of lemonade, only the first rectangle is crossed and the next touched; hence 2 bottles will be purchased.

By moving the line vertically up or down, we can directly read from the diagram how many units of each commodity will be purchased and consequently what total expenditure will be incurred, at a particular marginal utility.

## CURVES

### HOW TO DRAW A CURVE

On a piece of squared paper, two lines at right angles to each other are drawn so as to intersect at a point which lies at a place most convenient and suited for the purpose in view. O by which is usually known the point of intersection is the starting point or the origin and the horizontal and the vertical lines through O are respectively called the axes of X and Y. They are labelled OX and OY. Jointly the two axes of X and Y are called the co-

ordinate axes. A distance measured parallel to the axis of X is called an abscissa and a distance measured parallel to the axis of Y is called an ordinate.

Now, if our object is to represent graphically the marginal utilities derived from the consumption of oranges, we measure marginal utilities along the axis of Y and oranges along the axis of X. In almost all cases, that quantity whose changes we want to observe are taken on the Y-axis and the other quantity whatever on the X-axis. Here our object is to see how marginal utility varies with the consumption of successive units of oranges; hence we measure marginal utility along the Y-axis.

**Choice of Scales.** Two scales have to be chosen, one for the number of oranges consumed and the other for the marginal utility derived. No rule can be laid down for the choice of a scale, but the one that serves the purpose best and is not so manipulated as to distort the results wilfully or create wrong impressions is the most suitable. After the choice of proper scales has been made, equal intervals are marked on each of the two axes. The size of an interval on the Y-axis needs not be equal to the size of an interval on the X-axis.

The relative length of spaces on the co-ordinate axes is determined more by the purpose for which the curve is intended than by any other consideration.

To draw the curve now we run the eye up the ordinate through the point marking the unit of the commodity consumed till it meets the abscissa through the point marking the utility derived from the consumption of that unit, and place a dot on the point of intersection. We do the same for each unit consumed, till all the units consumed successively have been dealt with. The resulting dots are then joined by *straight lines* with the help of a ruler, thereby getting the required curve. Points must be carefully joined and the line of uniform thickness drawn.

In constructing a graph, the following considerations must be carefully borne in mind, for without them a diagram is neither complete nor satisfactory.

- Graphic comparison
- Rapid comprehension
- Accuracy
- Proportion
- Heading and legend

This mnemonics from the word 'GRAPH' is very helpful in diagrammatic representation of facts.

### LAW OF DIMINISHING UTILITY

In diagram 6 is shown the curve drawn in accordance with the principles already mentioned.

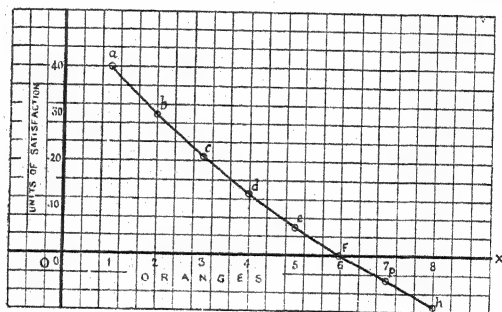


Diagram 6

It is the curve of diminishing utility from the consumption of successive units of oranges. Figures of additional utility used are the same as given on page 123. The side of each small square on the Y-axis represents 4 units of utility and the sides of five small squares on the X-axis represent two oranges.

The curve cuts the axis of X. It meets that axis at the mark 6, thereby indicating that the

utility obtained from the sixth orange is zero. All that portion of the curve which lies below the X-axis stands for the negative utility yielded by the seventh and eighth oranges. Negative utilities are measured along OY', the portion of the Y-axis lying below the origin. The farther we move away from the origin in this direction, the greater is the negative utility.

#### DEMAND CURVE

Demand curve is drawn exactly in the same way as the diminishing utility curve except that in this case by convention we always measure price along the axis of Y, and not utility. The figures employed in the construction of this curve are those given on page 435. A is the point of intersection of the abscissa through the mark 12 on the Y-axis and the ordinate through the mark 7 on the X-axis. It indicates that when the price is as high as 12 as a dozen, only 7 dozens of mangoes will be demanded. Similarly, the points B, C and D may be interpreted. Points A and B are joined by a straight line; points B and C are also joined by a straight line; and so on. Every two consecutive points are connected by means of a straight line.

Demand curve is derived from the diminishing



utility curve and is, therefore, always a falling curve. It runs down from a higher to a lower level as shown in diagram 7 below.

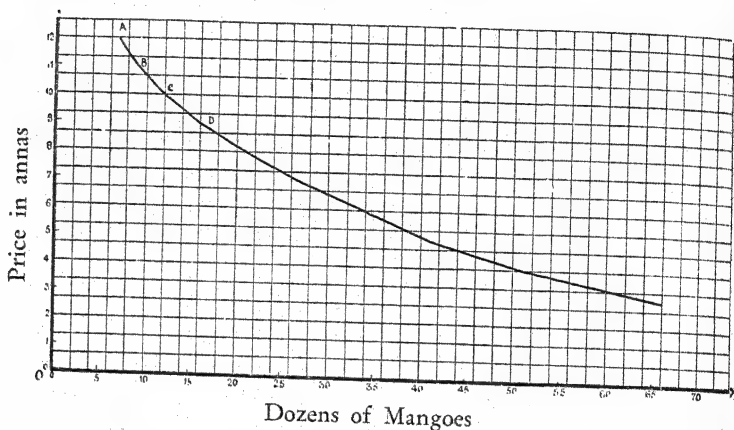


Diagram 7

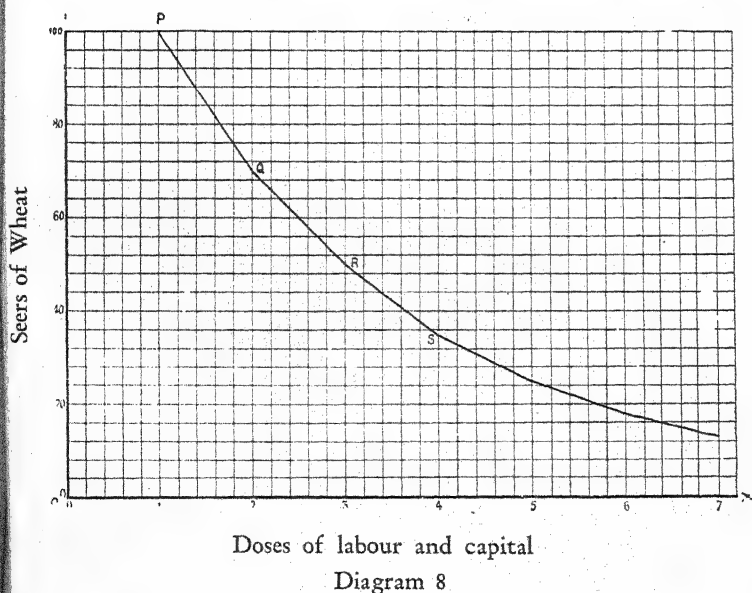
This curve is a convex curve with respect to the axis of X. Generally demand curves are convex curves. But they can also be concave curves or merely straight lines.

### PRODUCTION CURVES

#### *Law of Diminishing Returns*

A curve of diminishing returns is shown in diagram 8. At first sight it may be mistaken for a demand curve, because it is a descending curve. On close examination, however, it may be noticed

that in this case seers of wheat have been taken on the Y-axis, and not prices; and doses of labour and capital have been taken on the X-axis, and not the quantity of the commodity; hence it cannot be a demand curve. When *marginal* returns of produce are measured along the axis of Y and doses of labour and capital or cost on the axis of X, the resulting curve is the curve of diminishing returns. In Diagram 8 given below, figures of page 347 have been used.



Point P shows that when the first dose of labour and capital is employed, 100 seers of wheat are produced; point Q shows that when the second dose of labour and capital is employed, only 70 seers of wheat are raised, and so on. As in the case of demand curve, points P and Q are connected by means of a straight line.

The curve of diminishing returns can also be convex or concave. In diagram 8 it is a convex curve with respect to the axis of X, and is usually so.

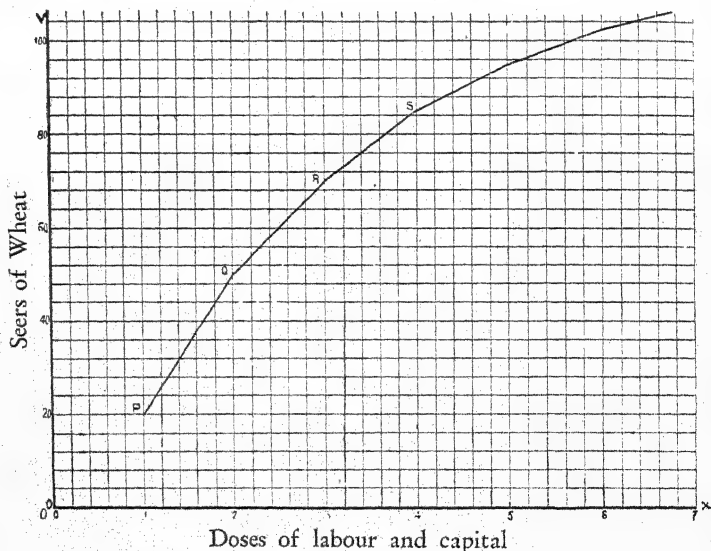


Diagram 9

*Law of increasing returns*

Diagram 9 shows the curve of increasing returns. On the axis of Y are measured seers of wheat and on the axis of X doses of labour and capital. The curve in this case is a rising curve. The method of drawing this curve is exactly the same as used before. Figures given on page 364 have been employed in constructing this curve.

Like the diminishing returns curve, the increasing returns curve can also be convex or concave. In this case it is a concave curve with respect to the axis of X.

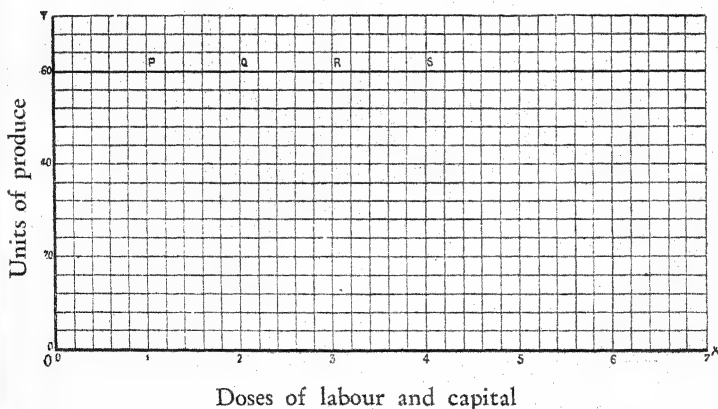


Diagram 10

*Law of constant returns*

Diagram 10 illustrates this law. The curve is a straight line running parallel to the axis of X.

Point P indicates that the first dose of labour and capital gives 60 units of produce on an average; point Q shows that the second dose of labour and capital yields 60 units of produce on an average; and this is the case with every successive dose of labour and capital.

## SUPPLY CURVE

The curve in diagram 11 is the supply curve. It runs from right to left. Point A indicates that 61 dozens of mangoes can be supplied at 12 annas

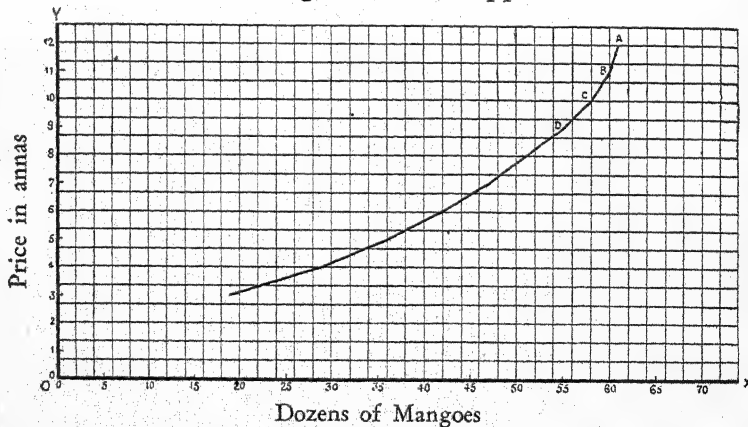


Diagram 11

a dozen. Point B shows that even when 11 annas be the price for a dozen of mangoes, the seller can gladly offer 60 dozens of them; and so on. The figures used in drawing this curve are those given on page 458. A and B, B and C, C and D are all joined by straight lines.

### BALANCING OF DEMAND AND SUPPLY

The curves given in diagrams 7 and 11 are brought together in diagram 12. The demand curve is labelled D D curve and the supply curve

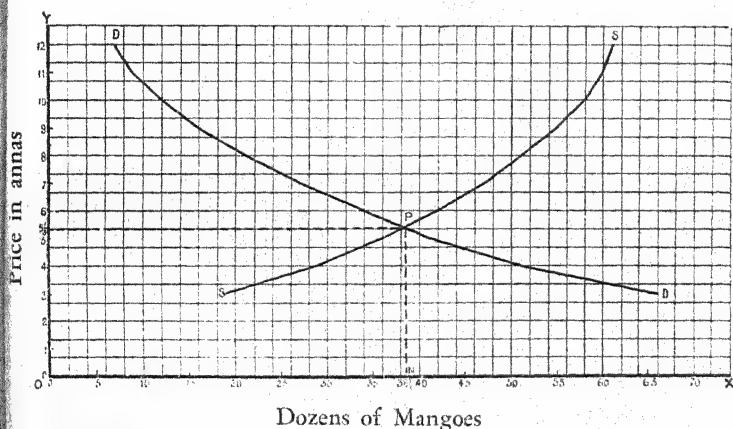


Diagram 12

is labelled S S curve; D D and S S are the names by which the demand and supply curves are usually denoted.

The two curves intersect at P. From P is let fall a broken vertical line meeting the axis of X at N, and another horizontal and broken line meeting the axis of Y. Point P, therefore, read that  $38 \frac{2}{3}$  dozens of mangoes will be exchanged at  $5 \frac{1}{3}$  annas per dozen and this bargain will be acceptable to both the parties concerned; P is the point of equilibrium. It is the point which lies on demand as well as the supply curve. Considering P to lie on the demand curve, we may say that at the price  $5 \frac{1}{3}$  annas a dozen,  $38 \frac{2}{3}$  dozens of mangoes will be demanded; considering P to lie on the supply curve, we may say that if  $5 \frac{1}{3}$  annas be the price offered for a dozen of mangoes, the seller will sell  $38 \frac{2}{3}$  dozens of mangoes. Hence  $5 \frac{1}{3}$  is the price at which the buyer and the seller both agree to have and give  $38 \frac{2}{3}$  dozens of mangoes. How easily is the problem of price solved with the aid of the diagram! No other device can tell so quickly and easily the market price at which the bargain will be settled. No amount of reasoning can find out the exact point of equilibrium of demand and supply. Herein lies the great advantage of diagrams.

## MARKET PRICE

A few more cases in a general way are given to show how market price is affected when demand or supply is not constant.

*Case I.* Suppose the demand and supply curves intersect at the pt. P (see diagram 13).

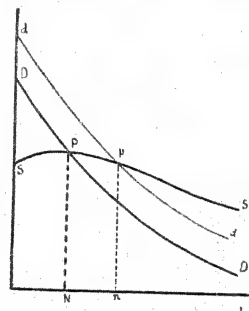


Diagram 13

The market price under such circumstances is PN. Let demand change to dd, supply remaining constant. dd lies above DD; hence when the change takes place from DD to dd, the demand is said to increase. The new point of equilibrium is p at which SS and dd intersect and the market price is pn. pn is smaller than PN; hence the market price is decreased when supply is kept constant and demand is made to increase. But this is not necessarily the case every time. If SS



curve first ascends and then decends, the market price may sometimes increase with an increase in demand.

If, however,  $dd$  be supposed to be the original demand curve and  $pn$  the original market price, the result will be reversed. For, now  $DD$  becomes the demand curve after the change has taken place and therefore the demand will be said to decrease in this case. When  $DD$  lies below the original  $dd$  curve, demand is said to fall. If demand falls and supply remains constant, the market price is increased as in this case ( $PN$  being greater than  $pn$ ), although this is not always the case.

*Case II.* In diagram 14 given below,  $PN$  is the market price as before. The same two curves  $DD$  and  $SS$  intersect at the point  $P$ . Suppose that

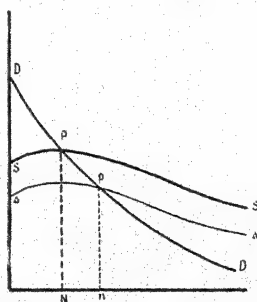


Diagram 14

in this case demand remains constant and supply varies. Let  $ss$  be the new position of the supply curve. Since this new supply curve lies *below* the original  $SS$  curve, *supply is said to increase*. When supply increases and demand is fixed, market price is lowered as shown by the line  $pn$  which is smaller than  $PN$  in the diagram 14.

$p$  is the new pt. of equilibrium.

If  $ss$  be taken to be the original supply curve,  $SS$  will be the new supply curve, in which case supply will be said to decrease and the market price to increase from  $pn$  to  $PN$ .

*Case III.* Let the supply be an ascending curve now as shown in diagram 15. The demand curve is the same as before.

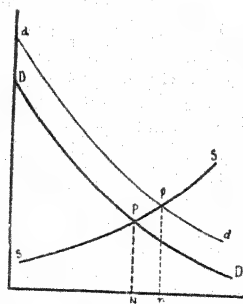


Diagram 15

Now, if the demand increases, market price will rise from  $PN$  to  $pn$ . If the demand decreases,

market price will fall from  $pn$  to  $PN$ .

*Case IV.* In diagram 16, demand is shown to be constant and supply to vary. If supply increases, price will fall from  $PN$  to  $pn$ ; if it decreases, price will rise from  $pn$  to  $PN$ .

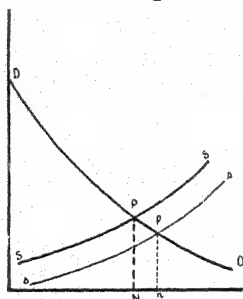


Diagram 16

*Case V.* Let the supply curve be a st. line now (Diagram 17). In this case, if demand increases, price is unaffected because even at  $p$ , the new point of equilibrium, the market price  $pn$  is as high

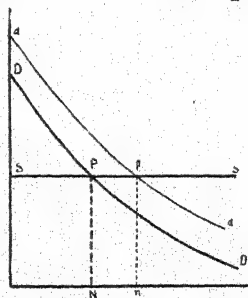


Diagram 17

as PN which is the market price at the point P. If demand decreases, price is unaltered for similar reasons.

*Case VI.* In this case supply changes and demand does not. Evidently from the diagram 18, price is unaffected whether the supply is increased or decreased.

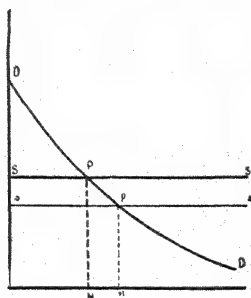


Diagram 18

### CURVES OF INCREASING COST AND DECREASING COST

In diagram 19 is shown the curve of diminishing returns. In this the doses of labour and capital (or the total cost) are taken on the X-axis and marginal produce on the Y-axis. When the cost is OE, the marginal produce is oq; when again an *equal* cost measured by ED is incurred, the resulting marginal produce is Or. Or is smaller than oq,

which means that as more and more of equal doses of labour and capital are applied successively, marginal produce diminishes. Similarly when DC which is equal to ED is the cost incurred, the marginal produce that results is OS which is less than Or, and so on.

As we want to notice changes in the marginal produce, we measure marginal produce along the axis of Y. The axis of X is divided into equal parts, each indicating a dose of labour and capital or a unit of cost.

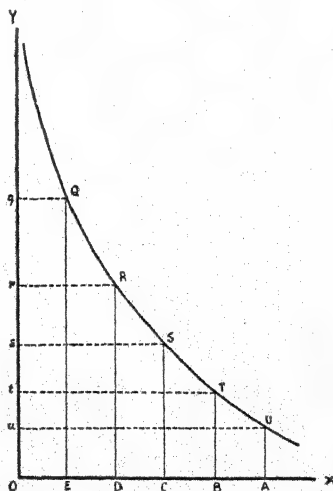


Diagram 19

Diagram 20 illustrates increasing returns. Doses of labour and capital, (or total cost) are taken on the X-axis and marginal produce on the Y-axis. As before, the axis of X is divided into equal parts.

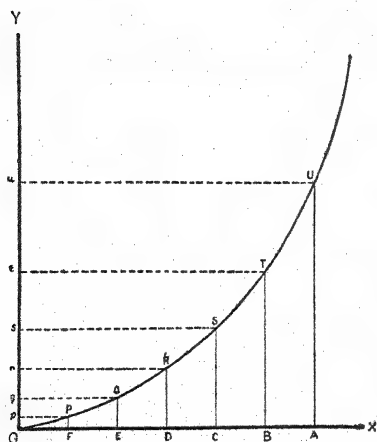


Diagram 20

When the cost incurred is OF, the resulting marginal produce is op; when an additional equal cost is incurred, it gives marginal produce equal to Oq which is greater than op, showing thereby that increasing marginal produce is obtained. When further equal amounts of cost indicated by ED, DC etc., are applied, the corresponding

marginal returns of produce amount to Or, Os etc., which stand in ascending order.

Had we taken *total produce* in place of total cost on the X axis and *marginal cost* in place of marginal produce on the Y axis, the resulting curves would have been the *cost* curves. From the figures of marginal produce, those of total produce can be worked out and from the figures of total cost, those of marginal cost can be calculated. When figures thus obtained from those employed in the drawing of the *Diminishing returns* curve, are diagrammatically represented, they give rise to the curve of increasing cost. And when those are used which have been worked out from those that gave the curve of *increasing returns*, the resulting curve is the curve of *decreasing cost*.

Hence the law of increasing cost is another name for the law of diminishing returns and the law of diminishing cost another name for the law of increasing returns.

## MARGINAL AND AVERAGE RETURNS

Doses of labour and capital	Marginal Returns	Total returns	Average returns
1	10	10	10
2	30	40	20
3	38	78	26
4	38	116	29
5	29	145	29
6	23	168	28
7	21	189	27

$$\text{Average returns} = \frac{\text{Total returns}}{\text{Corresponding doses of labour and capital}}$$

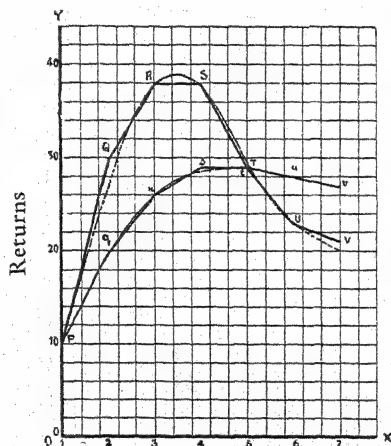
$$\text{For example, } 26 = \frac{78}{3}$$

$$29 = \frac{145}{5}$$

The figures given in this table have been used to draw the curves shown in diagram 21. The curve PQRSTUV in the curve of marginal returns and the curve Pqr sT uv that of average returns. T is the point at which the two curves intersect each other. This is a very important point. When production proceeds in such a way that increasing returns are had in the beginning and diminishing returns after a certain point is reached the production *must necessarily be carried at least upto the pt. T*. It cannot stop before where marginal returns



are maximum. It can be carried further to any point beyond T, depending upon the market price of the produce. The reason why this should happen, beginners need not bother with. Advanced students are required to know it and hence it is not given in this book.



Doses of labour and capital

Diagram 21

Points P, Q, R, S, T are all joined by means of straight lines; similarly points P, q, r, S, T are also joined by straight lines. The curves that pass through these points are simply meant to show the

nature of the two curves. We give both these curves in a separate diagram 22.

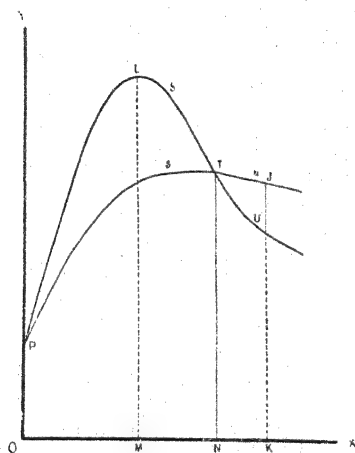


Diagram 22

### RENT

Rent may also be represented by a diagram. When doses of labour and capital are successively applied to a piece of land, they yield marginal returns. These returns are shown in diagram 23. Doses of labour and capital are taken on the X-axis and marginal returns on the Y-axis. This diagram looks exactly like diagram 1. The principle of drawing in both the cases is the same.

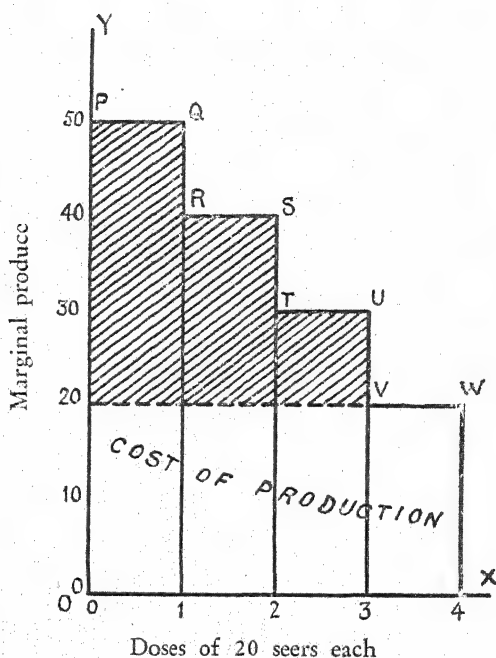


Diagram 23

Rectangle VX represents the marginal produce as obtained from the application of 4 doses of labour and capital. The line through WV and 20 sets apart the portion which stands for the total cost incurred in raising the total produce. The shaded portion represents the producer's surplus which is called economic rent or rent simply.

**Economics and Mathematics.** Economics is

the science of man in relation to wealth, which is susceptible to mathematical treatment. Hence wealth provides a measurable medium through which all man's motives and actions manifest themselves. By means of money we can quite satisfactorily, if not very accurately, estimate and compare the utilities which a consumer obtains by the consumption of two commodities. We may also employ arithmetical numbers to bring out truths regarding the utility of commodities. For example, if the utility derived from one commodity is greater than that obtained from another, we may assume that the utility of the one is 20 and that of another 16. The quantitative expression may not be quite accurate; the arithmetical figures 20 and 16 may be quite fictitious, but this should not prevent us from subjecting our principles to a quantitative analysis. Mathematics is the most exact science and its use in economics helps a good deal in clearly understanding economic truths. Cournot, Wallas, Jevons, Wicksteed, Marshall, Pigou, Fisher, Thompson are ardent followers of mathematical methods. All of them explain economic facts by using curves and algebraic symbols. The use of algebraic symbols is preferred to arithmetical num-

bers, because if 20 and 16 are not to be regarded as accurate and satisfactory measurements of the utilities,  $a$  and  $b$  respectively may be used with advantage to denote the greater and the smaller utilities.

Only few realise that no amount of description, howsoever clear and precise, cannot express, in a scientific manner, economic tendencies which are complex to understand. Verbal statements are always vague more or less, but mathematical treatment of economics is scientific. And so long as economics tends to be a science, mathematics in economics must be freely and widely used. Economics must be explained and illustrated by numerical examples and algebraic equations and curves. We support the view that economics is purely mathematical in character.

**Advantages of mathematical treatment of economics.** A great many advantages are secured by the use of symbols and diagrams. When an economic principle is explained by the aid of mathematics, our attention is at once drawn to the various assumptions which we make and which may be overlooked otherwise. For example, when a demand curve is being considered, we very often

do not realise the potent fact that it has that shape only under the assumption that the prices of all other commodities in the market remain constant. Not that alone, many truths of great importance may be discovered. We may try to ascertain the exact relation between the price and quantity of a commodity; we may enquire whether a certain rise in price leads to a proportional decrease in demand, or demand varies quite independently of price. In other words, the idea of elasticity of demand is suggested by the use of curves and symbols. Of the two demand curves, if one is more sloping than another, we may conclude that the demand is more elastic in one case than in the other.

The continuity of economic phenomena is also brought to light when diagrams are employed. The demand curve at once brings to light the fact that there is a continuous demand varying continuously with price. It starts from one point and proceeds without any breaks. Purely abstract reasoning cannot tell so many truths which may be easily overlooked. Similarly, without the aid of a curve, it is hard to conceive that with increased consumption utility diminishes continuously from the beginning to the end.

Lastly, it may be added that verbal expressions are bound to be lengthy and complicated, but in mathematical language the same fact may be explained briefly and concisely.

### EXERCISES

1. Represent graphically the budgets given in exercises on page 195.

2. Why do you represent the utilities obtained from the indivisible commodities by rectangles and those got from the divisible commodities by curves? Illustrate your answer by numerical examples and diagrams.

3. The following table gives marginal utilities as obtained from the consumption of the same commodity by three individuals A, B and C. Represent them diagrammatically and comment on the difference in the nature of the curves obtained.

Units of the commodity	Marginal utilities to		
	A	B	C
1	50	50	50
2	48	43	45
3	45	37	40
4	41	32	35
5	36	28	30
6	30	25	25
7	23	23	20

4. Calculate total utilities from the marginal utilities given above and represent them by means of curves, taking units of the commodity on the X-axis and total utilities on the Y-axis. Do you notice any difference in the three curves thus obtained? How do you account for the difference.

5. If the curve of diminishing utility crosses the X-axis, what does the pt. of intersection indicate? How do you interpret the portion of the curve that is below the axis of X?

6. 'A demand curve is the graphical representation of a demand schedule?'

Support the statement by numerical illustrations and curves.

7. Price	A's Demand for		
	X	Y	Z
8	10	50	105
7	12	55	120
6	15	61	140
5	20	70	168
4	30	80	210
3	50	100	280
2	90	125	420

Here are the demand schedules of A for three commodities X, Y, Z. Represent them graphically on



separate charts. Can you tell directly from these demand curves which demand is most elastic and which is least? How?

8. Calculate total expenditures from the figures given in Q. 7. Represent them by means of curves. Measure total expenditure along the Y-axis and demand along the X-axis. You thus get three *expenditure* curves separately for X, Y and Z. Are they not as helpful in depicting the nature of demand as demand curves?

Can you say which of the three commodities X, Y and Z is a necessity or a comfort or a luxury? How do you decide this from the graphs?

9. Suppose X, Y, Z are three men and their demands for a certain commodity stand as indicated by figures in Q. 7. How will you draw the curve for the total demand of the town which has 150 men such as X, 320 men such as Y and 600 men such as Z? Compare the curve thus obtained with the three demand curves for X, Y and Z.

10. Show with the aid of diagrams that the laws of increasing and decreasing returns are simply another names for the laws of decreasing and increasing costs.

11. Take figures of your own to illustrate graphically the law of production. Find out average returns also and plot the curve of average returns on the same

chart. Interpret the pt. of intersection. Do you think the production must proceed at least upto this point?

12. "A cultivator cannot afford to stop cultivation at L, (see diagram 22) the highest pt. on the curve of marginal returns. He must proceed at least as far as T where the curves of marginal and average returns meet or at least upto the pt. from which the *average* (not marginal) returns begin to diminish."

Comment on this statement and give diagrams wherever necessary to support your answer.

13. Calculate the market price from the following demand and supply.

Price	Demand	Supply
10	100	500
9	120	480
8	145	455
7	175	420
6	210	370
5	250	300
4	295	210
3	345	110

Can you use diagram obtained from these figures to indicate the importance of diagrammatic treatment of economic facts?

14. With the help of curves show that price fluctuates with demand and supply. Is it possible for the price to be unaffected even when demand and supply both change? Illustrate graphically. Don't you think graphic method is shorter than verbal statements for the expression of economic facts?

15. How is Economics related to Mathematics? Show by numerical illustrations and diagrams that for the proper understanding of economic problems, the science must be given a mathematical tone.

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